



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR 1 — CHART INFORMATION

SECTOR 1

BORNEO—NORTHWEST COAST AND KEPULAUAN TUDJUH

Plan.—This sector describes the four island groups of Kepulauan Tudjuh and the NW coast of Borneo. The general arrangement of each group is from W to E, with each island group described under a separate heading. The coast of Borneo is described from N to S.

General Remarks

1.1 Kepulauan Tudjuh (Tudjuh Archipelago) comprises those islands belonging to the Republic of Indonesia in the Eastern Archipelago, which lie in the S portion of the South China Sea, N of the equator. The islands are divided into four main groups, consisting of Kepulauan Badas, Kepulauan Tambelan, Kepulauan Natuna and Kepulauan Anambas. All the islands of Kepulauan Tudjuh lie W and NW of the W coast of Borneo.

Most of the islands are covered with dense vegetation, and in relation to their size are fairly high. The NW coast of Borneo described in this sector is that part extending from Tanjung Datu to Tanjung Padangtikar, about 166 miles SSE. The SW extremity of the sector is situated in position 1°04'S, 105°10'E, about 35 miles NW of the NW extremity of Bangka.

Winds—Weather.—The most important characteristic of the climate, is the seasonal change of the winds. It is customary therefore to recognize two seasons only, the Northeast Monsoon and the Southwest Monsoon. From March to May, the Southwest Monsoon extends N, and covers the whole area from June to August. During September to November the airflow is reversed and the Northeast Monsoon spreads S to the equator, and prevails over the South China Sea from December to January.

The Northeast Monsoon has a significant frequency of N winds over the area, while Southwest Monsoon has a great S component near the equator.

Over this area the average wind speed is 7 to 16 knots in winter, and 4 to 10 knots in summer. During the transition period in spring and autumn the winds are mainly light and variable except in isolated squalls.

The period from May to October is relatively free of gales apart from the localized storms during the passage of tropical storms. Gale force winds are more common during December, with winds of 28 to 33 knots comprising 1 percent of the total reports.

Rainfall is abundant over the whole area. Borneo has more thunderstorms than any other region in the world. Along the coasts many stations report thunder on 1 day in every three. Inland many places endure thunder on 2 days in 3. Some of the more violent storms cause considerable havoc with severe squalls and torrential rain.

Fog is rare over this area. Poor visibility (less than 5 miles) is reported on less than 5 percent of the observations, but the increases in frequency is greater during September near the Borneo coast; this haze spreads from the S hemisphere in late summer.

Good to excellent visibility prevails for most of the time, though sudden deterioration occurs in the heavier rainstorms. Patches of fog develop at night in estuaries and sheltered inlets and may be dense for a brief period around dawn.

Tides—Currents.—Currents in the vicinity of Kepulauan Tudjuh are of monsoonal origin and set predominantly in N directions from May to September and in S directions from October to April, with rates of up to 2 knots. The tidal currents have been observed in this area, from mid-July to mid-September and in December during the Northeast Monsoon, to set to windward against the monsoon drift, for a part of each day.

The movement of the surface water over the South China Sea is related, in general, to the monsoons, through the relationship is complex and not direct. The main SW setting current occurs during the Northeast Monsoon (November to March) and the NE setting current occurs during the Southwest Monsoon (May to September). Currents with a velocity of 1 to 2 knots may be encountered.

Depths—Limitations.—In the South China Sea between Singapore Strait and the W coast of Borneo, the depths are generally 38 to 44m.

Caution.—Numerous oil and gas fields exist off the coasts of Sarawak, Brunei, and Sabah. Each field contains clusters of installations, lighted and unlighted, permanent and movable, awash and submerged structures. However, most structures exhibit lights, especially platforms. Since not all features are charted or marked, mariners are cautioned to exercise special care when navigating these waters.

A vessel entering a restricted area may be challenged by Indonesian air and sea patrols.

Pipelines lead between structures, within a field, between the various fields, and to the shore collecting stations. Navigation is restricted and anchoring is prohibited in these areas. Gas pipelines contain high pressure flammable natural gas.

It is advised not to anchor, trawl, or drag near these pipelines. Vessels causing damage to a pipeline by anchoring or trawling risks prosecution, instant fire hazard, and loss of buoyancy to the vessel.

Floating or fixed drilling rigs may be encountered in some areas covered by this volume. The emitting flares from these structures may be seen from distances over 20 miles. Buoys and lighted buoys associated with drilling operations are frequently moored in the vicinity of the rigs. The positions of these rigs and buoys are subject to change, and where known, the changes are promulgated by NAVAREA XI radio navigational warning messages.

Permanent platforms, structures, and buoys are mostly charted. These structures usually exhibit lights (Mo (U) 15 seconds) and sounding fog signals (Mo (U) 30 seconds), and some below-water obstructions, marked by buoys in the gas fields. The limits of the gas fields are charted, but not all the features are contained within a field. Special care should be

exercised when navigating in the vicinity. Anchoring within a gas field is prohibited, except where designated.

Submerged or partially afloat drifting logs, roots and palm trees, etc., posing hazard to navigation are usually encountered between Kepulauan Natuna and **Balabac Strait** (7°30'N., 117°00'E.). Off the coast of Borneo, there are numerous fish havens, afloat and submerged.

Offshore terminals and oil fields situated off the NW coast of Borneo and covered by this sector are Kakap Natuna Oil Field, Anoa Natuna Oil Field, and Udang Oil Field. Details on Kerteh Oil Field, Tapis Oil Field, and Tenggol Oil Field are covered in Pub. 161. Anosa Oil Field and Udang Oil Field lie 24 miles NNW 68 miles SSE, respectively, from Kakap oilfield. Tapis Oil Field and Kerteh Oil Field lie 63 miles WNW and 86 miles W, respectively, from Kakap Terminal.

Mariners are advised that fish havens or artificial seamounts are numerous off the coast of Borneo and may be encountered off any coastline covered by this volume.

Numerous acts of piracy have been reported, usually by small gangs of armed men in fast boats in the areas.

Taking photographs of Indonesian harbors and installations is prohibited.

The area described in this volume lies in the middle of one of the earth's most active seismic zones. Most of the islands, with the exception of large parts of Borneo, have been subjected to destructive earthquakes. In recent years, the area was subjected to about 20 earthquakes of moderate to large intensity each year.

The archipelago contains 56 volcanoes that have been active within historic times. Of all these volcanoes, 51 are located on islands, and 5 are in the sea bed. Most of these volcanoes lie along the arc formed by the Indonesian Islands.

The most famous volcano in Indonesia is **Pulau Rakata** (Krakatoa) (6°09'S., 105°26'E.), it lies between Java and Sumatra in the Sunda Strait. The island is about 3 miles in diameter with an active volcano, Gunung Rakata rising to a height of 813m.

Volcanic activity in the waters between Rakata and Sebesi has been reported to exist. Vessels are advised to avoid this area.

Kepulauan Natuna

1.2 The islands of Kepulauan Natuna are the NE islands of Kepulauan Tadjuh and extend in a NNW direction for 190 miles from **Tanjung Api** (1°57'N., 109°20'E.), the NW extremity of Borneo. They are divided into three main groups and are described from N to S.

Kepulauan Natuna Besar—North Group

1.3 Pulau Laut (4°43'N., 107°59'E.) is the largest island in the group, which is comprised of one large island, two small islands, and several off-lying islets and dangers which lie about 30 miles NNW of Pulau Natuna Besar, the largest island in Kepulauan Tadjuh. The island has a length of about 7 miles and a greatest width, near its S end, of about 3 miles. It is generally hilly, rising near its N end to a summit of 273m.

The coast at this point is rather steep, but elsewhere it is low and sandy. The entire island is surrounded by an extensive drying reef, which extends to 2.8 miles off the E side and up to 3 miles off Tanjung Majam. Pulau Sekatung, precipitous and

hilly, 223m high, stands on the reef, 0.3 mile NNE of Pulau Laut. Tanjung Sekatung Light is shown from NE extremity of Pulau Sekatung. An obstruction was reported 28.5 miles N of Pulau Sekatung.

Batu Imung (4°38'N., 107°59'E.), a detached rock 18m high, stands S of the coastal reef, 4.5 miles SE of Tanjung Majam. Gloria Reef, with a depth of 2.4m, lies 2.8 miles SSW of Batu Imung. A coral reef, with a depth of 5.8m, lies 3.8 miles SE of Gloria Reef. Laurel Reef with a depth of 11.9m, coral, stone, and shell, lies 8 miles ESE of the NE extremity of Pulau Laut.

There are a number of charted dangers which lie between a line drawn from Laurel Reef SSE to the 5.8m coral reef described above, and the reef which encircles Pulau Laut; their positions may be seen on the chart.

1.4 Tokong Burung (4°25'N., 107°41'E.), a group of four rocks lying on a small reef, the highest being 4m, lies 21 miles SW of Tanjung Majam. Pulau (Semium) Semiun, a small, rugged, circular-shaped island marked by a light, lies 6 miles NNE of Tokong Burung. Of the three hills on the island, the one farthest W is the highest and reaches an elevation of 151m. The coast is precipitous except on its E side, where there is a sandy beach. The island is fringed by a steep-to drying reef that extends up to 0.5 mile offshore.

Two coral patches, with least depths of 4m and 8.8m lie, respectively, 1 mile SSW and 1.3 miles NNE of the island.

Anchorage.—During the Northeast Monsoon (October to March), vessels can anchor in 22 to 26m off the coastal reef, S of Pulau Laut, 2.3 miles WNW of Batu Imung.

There is also good anchorage in 12m, inshore of the detached reefs and close SSE of Tanjung Majam. Vessels proceeding to the inner anchorage steer for the SE extremity of Pulau Laut, bearing 044°, which leads between the reefs to the entrance. When Batu Imung bears 125° alter course gradually NW, keeping that rock astern bearing 134°, and anchor when the SE extremity of Pulau Laut bears 082°. During the Southwest Monsoon (May to September), good anchorage can be obtained in depths of 18 to 22m, 1.3 miles NW of the N extremity of Pulau Laut. This group of islands serve as good landmarks.

Kepulauan Natuna Besar—Middle Group

1.5 Pulau Natuna Besar (Pulau Bunguran Besar) (3°56'N., 108°14'E.), the principal island of the group, is about 36 miles in length. The island is almost divided into two parts by Kuala Bindjei and Sungai Penarik, which together, extend from the SW coast of Pulau Bunguran Besar to within 0.5 mile of the SE side.

Tanjung Semut (Tanjung Semui) (4°14'N., 108°13'E.), a low point, is the N extremity of Pulau Natuna Besar. From this point, the coast trends SE to Tanjung Datu, a sheer, barren, steep-to cliff, with a wooded summit, 111m high. Teluk Ajer Litjin, a small bay encumbered by reefs, lies between these two points.

From Tanjung Datu, the coast trends SSE about 9 miles to Tanjung Penedak, a low sandy point, then 5 miles farther SSE to Tanjung Tanjung, another low point. Foul ground extends up

to 2.3 miles offshore. Tanjung Sekatung Light is shown from NE extremity of Pulau Sekatung.

Tanjung Senubing (3°58'N., 108°24'E.), a prominent point, lies 4.5 miles SE of Tanjung Tanjung. Senubing, a hill 97m high, rises 0.3 mile inland. Tanjung Senubing Light is shown from a height of 88m. A prominent radio mast painted red and white bands, stands about 2.5 miles SW of the lighthouse.

The coastal waters from Tanjung Semut SE to Tanjung Senubing are fronted by reefs extending up to 1.3 miles offshore. The 18.3m line lies from 0.3 mile offshore at Tanjung Datu to 2 miles offshore at Tanjung Tanjung.

Pulau Senua, 2.5 miles NNE of Tanjung Senubing, has three summits. The highest is 115m high. Reefs extend up to 0.4 mile offshore from the S and W sides.

Karang Kring (4°03'N., 108°28'E.), which dries near its center, lies 3.8 miles NE of Pulau Senua; the channel between them is deep and clear.

An oil terminal lies about 1.3 miles SSW of Tanjung Senubing in Teluk Ranai. A tanker of 6,000 dwt may be accommodated at a T-head pier.

From Tanjung Senubing, the coast trends S about 4.5 miles to Tanjung Karang, a barren point, then 5.8 miles SSW to Tanjung Sebintang. The coast trends SW for about 10 miles from Tanjung Sebintang to **Tanjung Pianpadang** (Tanjung Pian Padang) (3°40'N., 108°18'E.), a low sandy point at the SE extremity of Pulau Natuna Besar. The land rises to Pian Padang, a hill 208m high, 0.5 mile inland.

This coast is indented by Teluk Ranai, a bay close S of Tanjung Senubing and by Sungai Ulu, which discharges between Tanjung Karang and Tanjung Pasir, about 1.3 miles NW. A dangerous wreck lies 2.8 miles NE of Tanjung Karang. The coastal waters are fronted by reefs which extend up to 3 miles E of Tanjung Pasir.

Karang Karang Penunggal (3°52'N., 108°29'E.) are the easternmost of the known dangers lying off Pulau Natuna Besar. Devonport Reef, with a depth of 4m, is the farthest S of these reefs, and a 1.8m reef 2.8 miles N of Devonport Reef lies the farthest N. There are numerous detached shoals between Karang Karang Penunggal and the coastal reef, W and SW to Tanjung Pianpadang.

Karang Lamina (Lamina Reef), with a depth of less than 1.8m, lies 4.5 miles E of Tanjung Pianpadang. A detached 11m patch lies about 0.5 mile SE of Karang Lamina.

Tanjung Sekol (3°38'N., 108°10'E.), the S extremity of Pulau Natuna Besar, is a bare, rugged point of a lofty mountain range extending N. From Tanjung Pianpadang to Tanjung Sekol, 8.5 miles W, the coast is fringed by a reef that extends as far as 1 mile offshore. A shoal patch with a depth of 5.8m was reported to lie 2.5 miles SE of Tanjung Sekol.

From Tanjung Sekol, the SW coast of Pulau Natuna Besar trends NW about 5 miles to an unnamed point, which rises to a height of 333m close within.

Komang, an island 186m high, lies on a reef close off the unnamed point described above. It lies on the N side of the W entrance to Selat Lampa. A rock with a depth of 4.9m lies 1 mile N of the W extremity of Komang.

1.6 Kepulauan Bodas (3°37'N., 108°05'E.) is a group of moderately high wooded islands lying close off the SW coast

of Pulau Natuna Besar. Pulau Sededap, the SW island of the group, lies about 8 miles SW of Tanjung Sekol. The island consists mainly of a wooded ridge, which rises on its W side to an elevation of 281m.

Pulau Sebang Mawang, the largest island of the group, lies 1 mile NE of Pulau Sededap. It has two prominent peaks; the N, 495m high, rises from an elevated ridge on the NE side of the island; the S, 449m high, an isolated sharp peak, stands 1.3 miles SSW. Pulau Kumbik stands 1 mile NW of Pulau Sebang Mawang. The island consists principally of a hilly ridge, which is 495m high near its center.

There are smaller islands, not described, in this group which may be seen on the chart. A channel, with depths of from 11 to 22m, leads between the reefs S of Pulau Kumbik and those fringing the S islands of the group. This passage should not be made unless the reefs are uncovered.

Good anchorage, during the Southwest Monsoon (May to September), in depths of 11m, can be obtained in the W entrance of the above channel, about 0.5 mile SSW of the SW extremity of Pulau Kumbik.

Selat Lampa (Straat Laplace) is the channel that separates Kepulauan Bodas from the SW side of Pulau Natuna Besar. A strong current sometimes sets through the strait. Pulau Setahi, a wooded islet, 117m high, lies on the S side of the E entrance to Selat Lampa.

Karang Lampa, a shoal with a depth of 0.3m, lies about 2 miles SE of Komang, near the middle of Selat Lampa.

1.7 Tanjung Belitung (3°53'N., 108°01'E.), on the SW side of Pulau Natuna Besar, is the N entrance point to a bay which opens to the E. Komang, 12 miles SSE, is the S entrance point of the bay. The N and S shores of the bay are fronted by drying reefs which extend 2.3 miles offshore.

Kuala Binjei (Kuala Bindjet) lies at the head of the bay described above, and is formed by the confluence of Sungai Binjei and Sungai Penarik. The entrance to this estuary is encumbered by islets and shoals, through which a channel, marked by beacons, leads to an anchorage off Tanjung Blitung, about 9 miles NE of Komang.

The islands which lie on the N side of the marked channel are, from W to E, Serungus, 149m high, and Pasir, a small islet which lies 1.3miles WNW of Tanjung Blitung.

Pulau Semarong is a low islet located near the outer edge of a coastal reef, on the S side of the channel, 4 miles NE of Komang. The anchorage off Tanjung Blitung and the approach channel are for vessels with local knowledge only. The mouth of the bay and the approach are further encumbered by the following features:

Pulau Burung (3°42'N., 108°02'E.), a rock 27m high, which stands near the center of a coral reef 2 miles WNW of Komang.

Batu Neneh (3°42'N., 107°56'E.), a small reef, with a depth of less than 1.8m over which the sea breaks heavily, lies 6.5 miles W of Pulau Burung.

Karang Serval (Serval Reef), a coral shoal with a depth of 1.8m, lies 3 miles NNW of Pulau Burung. Several shoals, with depths of 0.9 to 4.9m, lie within a distance of 2 miles ESE of this reef. A rock, with depths of less than 1.8m, lies 0.4 mile E of the reef. A light is shown on the reef.

Kembang (3°45'N., 108°04'E.), a narrow double peaked islet 119m high, stands in the mouth of the bay, on the SW extremity of an extensive, detached, drying reef.

Other reefs lie in the immediate vicinity of this island, and may best be seen on the chart.

Pulau Sedanau (3°48'N., 108°01'E.), a prominent and hilly island 224m high, is divided into two parts by Selat Pemutus, a narrow creek. The island is surrounded by an extensive reef extending 1.3 miles from its W side. A drying reef lies 2.3 miles NW of Tanjung Tabi, the NW extremity of Pulau Sendanau. This island is located 5 miles NNW of Komang.

1.8 Genteng (3°48'N., 108°02'E.) (World Port Index No. 51545), the principal village of Kepulauan Natuna Besar, is situated at the head of an inlet in a reef, on the E side of Pulau Sedanau. The settlement consists of a group of structures built on piles over the reef and are connected to the village of Sedanau, lying W, by a bridge. An Indonesian administrative officer resides at Ajer Buluh, on the S side of an inlet close to Sedanau.

Genteng is approached from the S through a channel marked by beacons; local knowledge is necessary for the safe navigation of this channel.

Tanjung Belitung (3°52'N., 108°01'E.), a low point 4 miles N of Pulau Sedanau, rises to Sapol, a hill 208m high, 3.3 miles E.

Tanjung Pajung (4°00'N., 107°58'E.), 7.8 miles NNW of Tanjung Belitung, is the W extremity of Pulau Natuna Besar. The promontory of Tanjung Pajung is rocky and fronted by a drying reef which extends up to 1.3 miles offshore.

Three hills stand E of Tanjung Pajung. Pajung, the highest, 192m high, is 0.5 mile E of the point. Derian, a ridge 179m high, and Sebung, 120m high stand, respectively, 2 miles ESE and 2 miles ENE of Pajung.

Pulau Salor lies 6 miles W of Tanjung Belitung. The island, densely wooded, rises steeply from the sea to a prominent peak 489m high. A drying reef fringes the E side of the island and extends 1.5 miles off the SE side.

Two coral shoals, each with a depth of 3.4m, lie 7 and 8 miles WNW of Pulau Salor. A 4.6m shoal lies 2.8 miles NNW of this island. These shoals are not marked by water discoloration.

Numerous islets, shoals, and sunken rocks exist E of Pulau Salor to Tanjung Belitung and NNE of Pulau Salor to Tanjung Pajung, and can be seen on the chart.

1.9 Tokong Boro (4°04'N., 107°26'E.) is a group of four above-water rocks, standing close together on a steep-to reef about 0.5 mile in diameter. These rocks are known to the Indonesians as Pyramidaal Rotsen.

The NW coast of Pulau Natuna Besar, from Tanjung Pajung, 20.5 miles NE to Tanjung Semut, is low and densely covered with vegetation; it is fringed by a drying reef which extends up to 1.3 miles offshore.

Pulau Sabai, hilly and wooded, is located 0.5 mile WNW of Tanjung Pajung. A small rocky islet lies close NW of the island. An isolated 3.0m patch lies 2.8 miles WSW of Pulau Sabai.

Pulau Sedua (4°02'N., 107°54'E.) lies 4 miles WNW of Tanjung Pajung. The N part of the islet is 84m high, bold and rugged. Its S end is low and sandy with some coconut trees.

Pulau Selimu, 112m high, lies about 0.5 mile E of Pulau Sedua. Both islets are fringed by drying reefs. A 3m patch lies 1.5 miles S of Pulau Sedua. A coral shoal with a depth of 1.8m, unmarked by water discoloration, lies 4 miles W of Pulau Sedua.

Pulau Buton, an islet about 0.5 mile long, lies about 5.5 miles NE of Tanjung Pajung. It is surrounded by a reef that extends as far as 1 mile from its NE extremity. A narrow detached reef lies about 0.5 mile NW of the islet.

Pulau Samarago (4°06'N., 108°00'E.), a low islet nearly circular in shape, lies about 2 miles NW of Pulau Buton. The islet is surrounded by a reef. A rock with a depth of less than 1.8m lies about 0.4 mile SW of Pulau Samarago and a small drying reef lies 2.3 miles NE of the islet. When the reef is covered, it is marked by water discoloration.

Pulau Bunga lies 1.5 miles offshore, surrounded by an extensive reef, 8 miles ENE of Pulau Samarago. An area of foul ground, about 1.8 miles long, lies nearly 2 miles NE of the islet, and two patches, with depths of 4m and 5.5m lie, respectively, about 0.8 mile NW and 2.3 miles N of the islet. A detached drying reef lies 1 mile SW of Pulau Bunga and two patches with depths of 4.9m and 3m lie, respectively, 1.5 miles and 2.3 miles SW of this reef.

Pulau Panjang (4°15'N., 108°12'E.) is a narrow island about 2.5 miles long. Its NE extremity, Tanjung Kapalpanjang, which is steep-to and rocky, rises to an elevation of 51m. The island is fringed by a drying reef which extends up to 0.6 mile on the E side.

Selat Panjang is a narrow channel with depths from 11 to 14.6m, lying between the reefs fringing Pulau Panjang and Pulau Natuna Besar. It is free of detached dangers, and the reefs on either side can be distinguished by discolored water. There are several shoals with depths of less than 9m in the SW approach to the channel, and a 3m patch lies 1 mile SW of Tanjung Ju, the SW extremity of Pulau Panjang.

Vessels approaching Selat Panjang from W steer for the wooded summit of Tanjung Datu, bearing 090°, until Tanjung Ju bears 022°, alter course to 040° and keep the S extremity of Pulau Panjang on the port bow, until close to the point, then steer about 056° through the middle of the channel.

Vessels from the E steer for the S extremity of Pulau Panjang, bearing 245°, until Tanjung Datu bears 128°, then steer 237°, until the S extremity of Pulau Panjang bears 315°, course should then be altered to 220° until the wooded summit of Tanjung Datu bears 090°. Keep this bearing astern, passing between the shoals in the SW entrance.

Off-lying Islands and Dangers

1.10 Karang Bunta (4°21'N., 107°57'E.), consisting of two coral reefs, separated by a deep, narrow channel, lies 16 miles WNW of Pulau Panjang. The S reef has a least depth of 1.8m and is marked by discolored water. The N reef dries in places.

Semapi, a large reef which dries in places, lies on the NW side of Favorite Passage, with its NE extremity 9 miles WSW of Pulau Panjang. A shoal with a least depth of 2m lies about 3.5 miles NW of the NE extremity of Semapi and another patch with a least depth of 5.7m, lies about 0.5 mile S of its SW extremity of the island.

Pulau Seluan, a hilly, wooded island, 300m high, is located 9.5 miles NW of Tanjung Pajung. From the NW, the SW extremity appears as an islet. A coral reef with a least depth of 3.3m, lies 2 miles W of Pulau Seluan.

Favorite Passage, with a least depth of 16.5m in the fairway, is the channel between Semapi and the dangers close off the NW coast of Pulau Natuna Besar.

The passage is obstructed by the drying reef, 2.3 miles NE of Pulau Samarago.

Pulau Midai (3°00'N., 107°47'E.) is low near the coast and rises gradually towards the center. The summit, 179m high, consists of three peaks of almost equal heights; only two of these are visible from most directions.

The island is fringed by a narrow, drying reef. An islet stands on the reef near the middle of its W side. Numerous detached shoals lie within the 11m line, extending up to 2.5 miles offshore. Two rocks, with depths of 3m and 2.1m lie, respectively, 0.5 and 0.7 mile SW of the W extremity.

A light is shown from an elevation of 158m about 1.5 miles NE of the SW extremity of, near its summit of Pulau Midai.

At Sabang Barat, near the NW extremity, there is a break in the reef where boats can land at all times, at a stone pier; there is a flagstaff at the root of the pier. A wreck lies on the edge of the reef at the entrance. A light is shown about 0.5 mile NE of Sabang Barat.

At Seblat, near the middle of the S coast, there is an opening in the reef abreast the village, where there is a good landing for boats. Karang Jackson, with depths of from 4.9 to 11.9m, lie 3 miles E of the SE extremity of Pulau Midai.

A detached, coral shoal, with a depth of 5.8m, lies 1.5 miles NE of Karang Jackson. There is a clear channel between these reefs and the dangers off the E coast of Pulau Midai.

Karang Diana (3°06'N., 107°45'E.) consists of a number of coral patches in two main groups; the S group, with a depth of 4.9m, lies 2.5 miles N of Pulau Midai.

There is a clear channel between the S group and the shoals N of Pulau Midai. The N group lies 2 miles farther N. The shallowest patch with a depth of 3m, lies 6.5 miles NNW of the NW extremity of Pulau Midai. An isolated coral patch, with a depth of 3m, lies about 12.3 miles NE of Pulau Midai; it does not show by water discoloration.

Timau (North Haycock) (3°18'N., 107°33'E.), a conical shaped islet 65m high, lies 21 miles NW of Pulau Midai.

The islet is located on the NW side of a bank which has depths of 4.5 to 11m. A depth of 5.8m exists on the bank, 3 miles SSW of Timau. The channel between Timau and Karang Diana is clear and deep.

Karang Sedimin, located 18 miles ENE of Timau, consists of two rocks, standing close together, which are 16.4m high. A rock awash lies 0.2 mile SSW of the two rocks. These rocks lie on the W side of a bank, within the 18.3m line, on which there are irregular depths.

Two 7m patches lie, respectively, 1.3 miles NW and SSE of the rocks and a 10m patch lies 2 miles E of them.

Kepulauan Natuna Selatan

1.11 The S group of Kepulauan Natuna consists primarily of two groups of islands and dangers separated from the NW coast of Borneo by Api Passage; of these two groups, the S

group is mainly high and rocky while the N group is mainly low and flat.

Pulau Subi Besar (2°56'N., 108°51'E.) is the largest island in the Kepulauan Natuna Selatan group. It lies about 67 miles NW of Tanjung Datu, the NW extremity of Borneo. The island is low and flat and about 10.5 miles in length in a N and S direction. The island is fringed by reefs, which extend up to 4 miles offshore off its E side.

Pulau Subi-Kecil, 80m high at its N end, lies close N of Pulau Subi. A light, shown from a white metal framework tower 22m high, stands on the N summit of the island. Good anchorage can be obtained N of the lighthouse.

There is a sandy beach and landing by boat is always practicable, despite a strong current that sets parallel to the beach.

Batu Priuk (3°01'N., 108°52'E.) ([World Port Index No. 51530](#)), the principal village of the Subi group, is situated on the S side of Pulau Subi-Kecil. A natural basin in the coastal reef, approached from the E, affords good anchorage for small craft with local knowledge. There is also good anchorage off the entrance to this passage. Batu Ria, which is white in color and conspicuous, stands on the edge of the reef, 2 miles ENE of Pulau Subi-Kecil Lighthouse. A spit, with a depth of 8.2m at its outer end, extends 1.3 miles NE of Batu Ria.

Serdang Reef, with a depth of 6.4m, and Karang Laut, with drying rocks, lie, respectively, 9.5 miles ESE and 11.5 miles SE of Pulau Subi Kecil Lighthouse.

Pulau Tembelai, an islet lying on a drying reef, is located 2 miles SE of the SE extremity of Pulau Subi; the channel between them is foul. Several shoals with depths of 1.8 to 11m extend about 5.5 miles SW of Pulau Tembelai.

1.12 Pulau Bakau (2°54'N., 108°44'E.), located about 3 miles W of the W extremity of Pulau Subi Besar, is fringed by a reef. A rock awash lies about 0.5 mile NW of its N extremity and a spit with a depth of 3.6m extends 0.5 mile N of its N extremity.

Pulau Tudang, fringed by a reef, stands 1.3 miles ENE of Pulau Bakau. Pulau Dengajak, low and covered with palm trees, lies on the coastal reef, 3.3 miles NE of Pulau Tudang. A 4.5m shoal patch lies 1.3 miles W of Pulau Dengajak.

Other shoal patches lie between a line extended from Pulau Bakau to Pulau Dengajak and the reef fringing Pulau Subi Besar. This area is foul and unsafe for navigation. A shoal patch, whose position is doubtful, is reported to lie 8 miles W of Pulau Bakau.

Pulau Panjang (2°45'N., 108°55'E.), lying 7 miles SE of Pulau Subi Besar, is a low island completely surrounded by a drying reef which extends 2.3 miles from its SW end. Pulau Kerdau stands near the SW end of the reef, 1.5 miles SSW of Pulau Panjang.

Two patches with depths of 2.7m and 3m lie, respectively, 1.3 and 3.3 miles, WSW of Pulau Kerdau. A depth of 12.8m lies 2.8 miles SSW of the island.

Pulau Sebiang and Pulau Japu are two low islands, covered with coconut trees, located on a drying coral reef, 3.3 miles N and 3 miles NW of Pulau Kerdau.

Pulau Seraya (2°41'N., 108°34'E.), the southwesternmost of the Subi Group, lies 16 miles SW of Pulau Subi Besar. It is a hilly island, 3 miles long, with two peaks near its center; the S hill, 253m high, is higher.

The E side is low, sandy, and fringed by reefs. The W side rises steeply from the sea; its N part is fringed by a reef, and foul ground extends 0.4 mile offshore. A 3.7m patch lies 0.5 mile NE of its N extremity.

Karang Dua 19m high, lies 1.5 miles NE of Pulau Seraya; it is surrounded by a reef and should not be approached within 0.5 mile. An 11.8m patch lies 2 miles SE of this rock.

Jaring Reef, with a least depth of 3.6m, coral, lies about 3.5 miles N of Karang Dua. A 9.1m patch lies 3.3 miles NNE of the reef.

Swanley Reef lies 4.3 miles E of Karang Dua. Pumubabung, a reef awash, about 2 miles in diameter, lies about 4 miles E of Swanley Reef.

1.13 Jabak (2°47'N., 108°44'E.), a reef, awash, lies about 3.5 miles N of the W end of Pumubabung. A coral shoal, with a least depth of 3.6m, lies about 2 miles W of Jabak and depths of less than 8.6m extend 0.8 mile W from this shoal.

A rock with less than 2m lies 1.5 miles NW of Jabak. A 8.5m patch lies 1 mile ENE of the rock. Another shoal, with a depth of 2.7m, lies 2.5 miles E of Jabak.

Karang Latu, consisting of a black boulder on a dry sandbank, surrounded by a drying reef, lies 4.8 miles ESE of Jabak. A 5.4m patch lies 0.5 mile SSW of Karang Latu.

Pulau Mambat, low and covered with coconut trees, lies 3.3 miles NE of Pulau Sebiang; the islet lies on a narrow reef, parts of which dry, which extends 1.3 miles NE and SW of the islet. A 9.1m patch lies 2 miles ENE of Pulau Mambat.

Pulau Serasan (2°31'N., 109°03'E.) is one of the most important islands in the S group of Kepulauan Natuna.

The island is also in the S group, previously described, of Kepulauan Natuna Selatan. The island is mountainous, rising near its SW end to a height of 441m. Koti (Kota), a hill 232m high, near the NW extremity of the island is nearly vertical on its W side, with prominent bare, red patches. The E and S coasts of the island are fringed by drying reefs, which extend up to 0.8 mile offshore in the bight near the middle of its S side.

Batuberian Besar (2°30'N., 108°57'E.) is the W island on an extensive reef, lying W of Pulau Serasan, on which are several other islands. This reef is separated from Pulau Serasan by Pelabuhan Serasan (Royalist Haven).

Batuberian Ketjil lies close NE of Batuberian Besar. Two detached portions of the reef, which dry, lie between 0.5 and 1.3 miles S of Batuberian Besar. Pulau Karanghaji (Pulau Haji), the S island, lies on a detached reef 2 miles SE of Batuberian Besar; a 5.8m patch lies about 0.5 mile E of Pulau Karanghaji.

Besar, an island 110m high, lies 2 miles NNE of Pulau Karanghaji. Besar, and four islets, lie on the NE side of the reef E of Batuberian Besar.

A bank, with a depth of 14m, lies 2.3 miles SW of Pulau Karanghaji. Patches and shoals, with depths from 1.7 to 10m, lie about 1 mile from the N coast of Batuberian Besar, in an arc from WSW through N to NE.

A shoal, with a depth of 3.7m, lies 0.5 mile WSW of the NW extremity of Batuberian Besar.

1.14 Pelabuhan Serasan (Royalist Haven) (2°30'N., 109°01'E.) ([World Port Index No. 51520](#)) is the whole of the

narrow passage between Pulau Serasan and the extensive reef SW; it affords good shelter in all seasons.

The haven is entered from the S, between beacons marking Batu Patjil and Batu Hol, two shoals lying SW of **Tanjung Ibul** (2°29'N., 109°01'E.), the SW extremity of Pulau Serasan.

Batu Patjil, a detached coral shoal with a depth of 2.4m, lies 0.5 mile SW of Tanjung Ibul. The shoal is marked on its E side by a lighted beacon.

Batu Hol, a coral shoal awash at its W end lies about 0.3 mile SW of Tanjung Ibul. A beacon standing on the W side of the shoal, marks the E side of the fairway. Most of the shoals in the S part of the channel of Pelabuhan Serasan are marked by beacons.

Tanjung Jerpit, 1.3 miles NW of Tanjung Ibul, from close S of which a light is shown, forms the S entrance point of a bay cluttered by reefs which lie on the NE side of the haven extending as far as **Tanjung Tebur** (2°31'N., 108°59'E.).

Pulau Kepala, a low rock, is located 7.3 miles NNE of the NE extremity of Pulau Serasan, and Pulau Perhantuan lies 2.5 miles S of the SE extremity of Pulau Serasan. A chain of islands, which may be seen on the chart, lie between Pulau Kepala and Pulau Perhantuan; from N to S they are: Pulau Sedua, Rikel, Banya, Pulau Sempadi (a 2m patch lies 1 mile W), Pulau Peanyamuk (a shoal with a depth of 8m lies 2.5 miles WNW), and Pulau Genting.

A 500m jetty projects NW from the village of Palempak, 1.3 miles NE of Tanjung Jerpit, which can be reached by boat through a narrow channel marked by beacons.

Anchorage, in depths of 10m, can be obtained during the Southwest Monsoon (May to September), 1.3 miles NW of Batuberian Ketjil with the SW side of this island in line with the summit of Perayun Besar, bearing 129°. Care must be taken to avoid the shoals N of Batuberian Besar.

Anchorage within Pelabuhan Serasan, in depths of 14 to 18m, can be obtained 0.3 mile SW of Tanjung Seranding, a point 1 mile NW of Tanjung Ibul, or further N according to the monsoon.

Directions.—Pelabuhan Serasan should be approached by keeping Tanjung Seganding in range with Kota Hill, bearing 336°, which leads through the shoals in the entrance.

When Tanjung Ibul bears 083° and in range with the SE extremity of Pulau Serasan, alter course to bring the outer detached rock, a little over 0.3 mile S of Tanjung Tebur, just open E of the NE extremity of Besar, bearing 318.5°, which leads between the beacons marking the shoals S of Tanjung Seganding, to the anchorage.

When proceeding to a berth further N, steer between the reefs W of Tanjung Jerpit until the E side of the islets of Besar comes in range with the E side of Perayun Besar, on bearing 206°, and anchor as convenient.

When approaching from the SW, care must be taken not to mistake one of the beacons marking the shoals in the S part of the haven with the beacon marking Batu Patjil.

The harbor is approached by boat through a narrow channel marked by beacons.

Alur Pelayaran Kota is the passage between the Serasan Group and Pulau Pandang, of the Subi Group, 11 miles NNW.

Caution.—Pelabuhan Serasan should not be entered from the W between Tanjung Tebur and Batuberian Ketjil. The passage is unmarked and there are many shallow patches in the entrance and several awash and below-water rocks. The inner

harbor has a 500m jetty projecting NW from the village of Palembang, 1.3 miles NE of Tanjung Jerpit.

1.15 Haynes Shoal (2°34'N., 108°51'E.), coral and shell, with a depth of 5.8m, lies in the fairway 8 miles W of Tanjung (Kota) Koti. With the exception of this reef, Alur Pelayaran Kota is deep and free of detached dangers.

Alur Pelayaran Serasan (Serasan Passage), which is free of dangers, lies between Pulau Serasan and its adjacent islands to the N, and Pulau Malu (South Haycock) and Karang Karang Malu on the S side. The channel is about 7 miles wide.

Pulau Perhantuan is located in the E entrance to Alur Pelayaran Serasan, 2.5 miles S of the SE extremity of Pulau Serasan.

Karang Karang Malu, composed of coral, lie with their SW shoal, with a depth of 2.7m, 4.5 miles SE of Pulau Malu. The NE shoal, with a depth of 5m, lies 11 miles ENE of the SW shoal; between them are several detached shoals, three of which have sandy cays, which dry 2.1m.

Pulau Malu (South Haycock) (2°17'N., 108°54'E.) a small island 143m high, lies 11.5 miles SSW of Batuberian (Tebian) Besar. It is fringed by a narrow reef, and an above-water rock lies close SW of the island.

Sembuni Reefs consist of several rocky heads, with depths of less than 5.5m. The westernmost, which dries, lies about 12 miles ESE of Pulau Malu (South Haycock).

From this position, the reefs extend ENE for 8 miles, with a 3.6m patch near the E end. The reefs lie nearly parallel with Karang Karang Malu, to the N, from which it is separated by a channel that is clear.

Pulau Merundung (2°04'N., 109°06'E.) lies 10 miles S of the W extremity of Sembuni Reefs and 16 miles WNW of Tanjung Api. It is a swampy island covered mostly with mangroves, with the exception of two hills covered with trees. The tree tops have an elevation of 36m. A light is displayed on a 30m white metal framework tower from the center of the island.

A drying reef lies 0.5 mile off the W side of the island, with a 1.8m patch close NW of the reef. A 5m patch lies 1.3 miles NNE of the N extremity of Pulau Merundung.

Banks, with less than 18.3m, extend 14 miles NE of Pulau Merundung. A coral patch, with a depth of 7.8m, lies on one of these banks, 10 miles NE of the island.

Muri (Pulau Murih) (1°54'N., 108°39'E.), lying 29 miles WSW of Pulau Merundung, consists of two densely wooded islets joined by a drying reef; a narrow reef fringes both islands. The W islet, the largest, is 102m high; the E islet is 84m high. A light, shown from a white metal tower, 20m high, is situated on the W islet.

Anchorage can be taken N of the reef joining the two islets, in depths of 29m, or close S of the W islet, according to the prevailing wind. There is a refuge hut near each anchorage which can be reached by a narrow channel through the reefs, which is marked by beacons.

Muri Kecil, 2.4m high and steep-to, lies about 2 miles S of Muri; there is a deep channel between them. Muri Kecil is the SW extent of the Kepulauan Natuna Selatan group.

Caution.—Muri and Muri Kecil have been reported to lie 0.7 mile SW of their charted positions. A dangerous wreck lies 7 miles WSW of Muri Kecil.

Kepulauan Pengibu

1.16 Kayu Ara (Kaju Ara) (1°32'N., 106°27'E.), a white colored barren rock 23m high, is the southeasternmost of the small group forming Kepulauan Pengibu and lies about 110 miles E of the entrance to Singapore Strait. An above-water rock lies several meters off its S side. Pengibu, 96m high, is a small densely wooded island lying 8 miles WNW of Kayu Ara. A stranded wreck lies on the N shore of the island.

Hughes Shoal, 0.4 mile in length, with a least depth of 5.8m, lies about 0.5 mile SW of Pengibu, from which it is separated by a deep channel. The sea never breaks over this shoal.

A shoal with a depth of 12.8m, was reported to lie 1.8 miles SE of Pengibu.

Kayu Ara and Pengibu form good landmarks and radar targets for vessels proceeding between Singapore Strait and the NW coast of Borneo. Acasta Rock lies 4 miles N of Pengibu; it is almost awash. In calm weather it can only be distinguished by the discoloration of the water, but it breaks in the slightest swell. A submerged wreck, with 28m depth, lies in the vicinity of the rock.

Pulau Mendarik (1°19'N., 107°-2'E.), 111m high, is located about 38 miles ESE of Kayu Ara (Kaju Ara). It consists of two hills connected by a low ridge and has sandy beaches on its E and W sides. Its N and S sides are rocky and rise steeply from the sea. A narrow reef fringes the E side of the island.

A rock, with a depth of less than 1.8m, was reported to lie 3 miles SE of Pulau Mendarik.

Kepulauan Tambelan

1.17 Kepulauan Tambelan is located between the parallels of 0°40'N and 1°15'N and the meridians of 107°12'E and 107°58'E. The island group is outside the usual track of shipping. The E island of the group lies 60 miles WNW of **Tanjung Batubelat** (0°49'N., 108°51'E.), the W extremity of Borneo.

A fairly clear channel divides the principal islands of this group into two smaller groups with good anchorage throughout the channel.

Kepulauan Tambelan—Northeast Group

1.18 Pulau Tambelan (1°00'N., 107°34'E.) is the SE island of the NE group, and the largest and most important of Kepulauan Tambelan. Three prominent peaks stand on the N side of the island. Bini, with an elevation of 396m, is the highest and W peak. Kotit, a remarkable sloping peak 291m high, stands 1 mile E of Bini and Puter Jala, 290m high, and cone-shaped, is 1.5 miles ESE of Kotit.

Tanjung Antju is the NW extremity of Pulau Tambelan. Between Tanjung Antju and Tanjung Kemantau, the E extremity of the island, the coast is generally clear and free of reefs.

Pilang-kecil is an islet lying a few meters off the coast about 2.3 miles ESE of Tanjung Antju, and Pilang-besar, a somewhat larger islet, lies about 0.5 mile off the coast NE Pilang-kecil. An above-water rock lies close N of Pilang-besar. A shoal with a least depth of 5.7m lies about 0.5 mile NNW of Tanjung Antju.

From Tanjung Kemantan to Tanjung Mardi Angin, there are several bays, all encumbered with reefs. A reef extends 0.5

mile S of Tanjung Kemantan. Batu Rakit, a rock awash, with a 7.3m patch close E of it, lies near the outer edge of this reef.

Tanjung Bertumpa (0°57'N., 107°33'E.), 0.5 mile WNW of Tanjung Mandi Angin is the S entrance point of Teluk Tambelan. From Tanjung Bertumpa to Tanjung Antju, 4.8 miles N, the coast is fronted by a reef except in the entrance to the bay. NW of the entrance to Teluk Tambelan, the coastal reef extends about 0.6 mile offshore. The islets of Pulau Kera and Pulau Betunde lie on the reef about 2.3 miles and 2.8 miles NNW, respectively, from Tanjung Bertumpa.

Teluk Tambelan (0°59'N., 107°33'E.) is entered between Tanjung Bertumpa and Tanjung Ayam, 1.3 miles N. The bay nearly divides Pulau Tambelan into two parts.

The entrance to the bay is comparatively free from dangers, but farther in it is encumbered with reefs. Some of the reefs are marked by beacons.

Tanjung Sadap is located 1.3 miles NNE of Tanjung Bertumpa. The coast between the two points is fringed by a reef, with some above-water rocks on it. The NW side of the reef is marked by three beacons, white with truncated cones.

Anchorage can be obtained in the entrance to Teluk Tambelan during the Northeast Monsoon, but this anchorage is unsafe during the Southwest Monsoon, when better anchorage, with local knowledge, can be obtained NW of Tanjung Sadap, in depths of 16m.

Caution.—A pinnacle rock, with a least depth of 3.6m, lies in the fairway 0.3 mile SSE of Tanjung Ayam.

1.19 Batu Lepu, a village situated near the head of the bay, 2 miles NE of Tanjung Sadap, can be reached by boats through a channel marked by beacons.

A pier, 160m long, with depths of 0.5m alongside stands on the NW shore, 0.4 mile SW of Batu Lepu.

Pulau Bungin (1°02'N., 107°31'E.), 87m high, lies 1.3 miles W of Tanjung Antju.

A reef with a least depth of 3.6m lies about 0.5 mile NE of the island, and two rocky patches with least depths of 7.3m lie, respectively, 0.2 and 0.5 mile SW.

Pulau Sedua-besar, 270m high, Pulau Sedua-kecil, 198m high, Pulau Sendulang-kecil, 91m high, Pulau Sendulang-besar, 241m high, and Pulau Uwi, 333m high, lie, respectively, 1.5, 2.5, 6.5, 6.8, and 8 miles WNW of Tanjung Antju, the NW extremity of Pulau Tambelan.

Each of these islands are steep-to with a fringe of shoal water and are clear of dangers except Pulau Sedua-besar, which has a shoal patch with a depth of 4.2m close off its N extremity.

Pulau Uwi has a reef which extends 0.4 mile off its E side. Pulau Rakit lies near the SE end of this reef and another islet lies near its NE end.

The narrow channels between the islands of the NE group described above are mostly free from dangers, except those between Pulau Sedua-besar and Pulau Sedua-kecil, and between Pulau Sendulang-besar and Pulau Sendulang-kecil, neither of which should be used without local knowledge.

Off-lying Dangers

1.20 Karang Laut (Karang Robinhood) (1°11'N., 107°26'E.), a shoal with a least depth of 7m, lies about 4.5

miles NNE of Pulau Uwi. The sea does not break over this shoal. A coral reef, with a depth of 1m, lies 2.5 miles W of Karang Laut.

Tokong Belayar, an islet, lies 9 miles ENE of Karang Laut. It consists of two prominent boulders lying on a flat rock; the highest boulder is 37m high. Foul ground extends 0.2 mile S of Tokong Belayar, and depths of less than 10m extends 183m farther S.

Alida Shoal (0°59'N., 107°52'E.), with a least depth of 3m, stones and steep-to, lies 16 miles E of Pulau Tambelan.

Kepulauan Tambelan—Southwest Group

1.21 Pulau Benua (0°57'N., 107°27'E.) is the largest and highest of the SW group, located 3.8 miles WSW of Pulau Tambelan. The island, fringed by a reef that extends 0.5 mile from its SE side, is nearly 4 miles long and about 2.8 miles wide at its widest point. There is a peak 287m high on the NE side of the island.

Karang Tengah, with a depth of 4.9m, lies 1 mile ESE of Pulau Benua. Pulau Leso lies 0.3 mile W of Pulau Benua and is fringed by a reef. An above-water rock lies on the S end of a spit, which has depths of less than 10m, extending SSW from Pulau Leso.

A bank with a least depth of 4.9m near its outer end extends 0.7 mile from the NE side of the island. Pulau Nangka is located 1 mile NW of Pulau Leso. Pulau Ibul, 162m high, lies 0.8 mile NE of Pulau Nangka; it is fringed by a drying reef on its N side extending 0.4 mile offshore.

Pulau Nibung, with a drying reef, lies 0.2 mile off the SW side of Pulau Ibul. Pulau Peling, fringed by a reef, lies 0.8 mile NE of Pulau Ibul. Pulau Tamban, 86m high, lies 0.5 mile N of Pulau Ibul. A 4m patch lies 0.2 mile S of Pulau Tamban.

Pulau Panyang (1°00'N., 107°23'E.) is located 0.5 mile NW of Pulau Ibul. The island is fringed by a reef and has depths of less than 10m, 0.2 mile NE of the N end of the island. Pulau Lintang lies NW of Pulau Panyang and is separated from that island by a channel 183m wide. Two islets lie on the reef close SW of Pulau Lintang.

Pulau Mundaga, 212m high, stands 0.5 mile NW of Pulau Lintang and Pulau Genting, 86m high, lies 0.7 mile NE of Pulau Mundaga. Two shoals, with depths of 2.7 and 7.3m, lie near the N end of the channel between Pulau Ibul and Pulau Benua with other shoals possibly lying in the channel. Local knowledge is necessary for the safe navigation of the navigable channels between the islands.

1.22 Pulau Selintang (0°57'N., 107°29'E.), 208m high, lies close E of Pulau Benua. The island is fringed by a narrow reef and has a detached reef, awash, lying near the N end of the channel between these islands. Two rocks, with depths of 0.9m and 3.4m, lie 0.2 mile NW and 0.1 mile NE, respectively, off the N end of the island. A 3.6m shoal lies 0.3 mile NE of the same point. Pulau Jela, 81m high, stands 0.2 mile NE of Pulau Selintang.

The channel between these islands is deep and free of dangers, with the exception of the dangers that lie NE of Pulau Selintang, described above. Burung, an above-water rock, lies on the reef that fringes Pulau Jela, 0.2 mile N of its E extremity.

Pulau Bedua (0°57'N., 107°30'E.), 123m high, is located 1.3 miles E of Pulau Benua. It is fringed by a reef with depths of less than 5m, which extends 0.5 mile S and embraces Pulau Untuk. Pulau Lipi, which is fringed by a reef, lies about 0.1 mile S of Pulau Untuk, from which it is separated by a deep channel.

Pulau Batong, an islet 54m high, lies 0.5 mile E of Pulau Bedua and about 1.5 miles W of the SW extremity of Pulau Tambelan. There is a safe channel on either side of Pulau Batong; however, depths of less than 4.9m extend 183m N of the island.

Kapala Tambelan (0°54'N., 107°28'E.) is an islet lying 1.3 miles SSE of Pulau Benua. Karang Sobatan, a coral shoal with a depth of 4.9m, lies 2.5 miles SE of Kapala Tambelan. It is steep-to on its N, W, and S sides. Depths of 7 to 18m extend 0.6 mile SE of the shoal.

Mengirang-kecil, a hilly islet, lies 3.3 miles SE of Kapala Tambelan. A reef fringes the islet and extends 0.3 mile off its N extremity.

Mengirang-besar is a prominent island, 181m high, near its center, that lies 1.3 miles E of Mengirang-kecil from which it is separated by a deep, clear channel. The island is fringed by a narrow reef.

Tokong Mengirang (0°51'N., 107°37'E.), a conspicuous white rock about 24m high, is located 5 miles ESE of Mengirang-besar. Foul ground extends 0.2 mile SW and W from this rock. Two pinnacle-shaped rocks, each 3.6m high, lie near the SW edge of the foul ground.

A depth of 13.7m was reported to lie 8.5 miles ESE of Tokong Mengirang.

Kepulauan Anambas

1.23 The islands lie in the S part of the China Sea, approximately 130 miles NE of the E entrance of Singapore Strait. The SE island of the group lies about 193 miles NW of the W point of Borneo. Vessels bound from Singapore to Hong Kong usually pass W of this group. All islands in the Anambas group are extremely hilly, and most of them are densely wooded. The abundance of coconut plantations is a noticeable feature of these islands.

The Kepulauan Anambas are divided into two groups. Pulau Jemaja, 466m high, is the largest of the SW group and Pulau Siantan, 565m high, is the largest island of the NE group. In general, all of the Kepulauan Anambas N and E of Pulau Siantan are included in the NE group and all others comprise the SW group.

The wider passages between the various islands in this group are generally free of dangers, but the narrower channels should be avoided, since most of these have not been completely surveyed. Masses of grass, small trees, and other debris from the rivers are sometimes encountered in the vicinity of Kepulauan Anambas. Some of these floating islands attain considerable size.

Kepulauan Anambas—Southwest Group

1.24 Pulau Jemaja (2°56'N., 105°46'E.) is the largest of the islands in the SW group. The island is about 15 miles long in a N and S direction and about 10 miles wide at its widest part. It is

densely wooded and mountainous. Gunung Tujuh, its highest mountain, attains an elevation of 466m and is conspicuous from any direction. Gunung Datu and Gunung Adong are conspicuous peaks located in the N part of the island. The former, 451m high, rises to a sharp peak, and the latter, 433m high, has a rounded appearance when viewed from the E or W, but appears as a sharp peak when viewed from the N.

The various mountains in the central and S parts of the island, many of them over 305m high, are more uniform in the outline and not as conspicuous as those described above. The coastline of the island is very irregular and is indented by numerous bays and inlets.

The N end of the island consists of two peninsulas projecting in a NW and NE direction. The NW peninsula is high, and has a reef extending 0.5 mile NW from it. The NE peninsula terminates in **Tanjung Minggu** (3°03'N., 105°44'E.), a prominent cape, 107m high. When seen at a distance, this cape appears as an island. There is good anchorage in the bay between these two peninsulas, in a position 1 mile W of Tanjung Minggu, in 29m, sand, away from the strength of the tidal currents.

The E extremity of Pulau Jemaja consists of a peninsula 2 miles wide that terminates in two points; Tanjung Pinang and Tanjung Jebung, 2 miles S. Teluk Mampo indents the NE coast, between Tanjung Pinang and Tanjung Minggu, 7.5 miles WNW.

The entrance to the bay lies between Tanjung Minggu and Pulau Ayam, an islet located 2.5 miles WNW of Tanjung Pinang. The shore at the head of the bay consists of a white sandy beach. Foul ground, with depths of less than 11m, extends from this shore a distance of about 1 mile.

A detached 5.4m patch lies outside the foul ground, about 3 miles WSW of Pulau Ayam. Pulau Gumbong, 97m high, is located in the N part of the bay, 1 mile SE of Tanjung Minggu. An islet, 70m, high is located between Pulau Gumbong and the shore. The general depths in the outer part of the bay are 24 to 28m, decreasing gradually toward the shore.

Anchorage is available near the center of the bay, exposed to the Northeast Monsoon, in depths of 20m, sand and gravel bottom, 2.5 miles W of Pulau Ayam. Pulau Pinang, an islet 82m high, is located 10.3 miles ENE from Pulau Ayam.

1.25 Teluk Jebung (2°57'N., 105°50'E.), lying SW of Tanjung Jebung, is fringed by a reef that extends as much as 0.5 mile offshore. The bay affords good temporary anchorage in its center, in a position about 1.5 miles SW of Tanjung Jebung in depths of 16 to 18m, sand bottom.

Tanjung Linang, a point located 4.5 miles SSW of Tanjung Jebung, is the S entrance point of Teluk Kuala.

The village of Kuala is situated on the N side of Teluk Kuala about 1.5 miles from the entrance. Good anchorage is available in the entrance to this inlet in a position 0.5 mile N of Tanjung Linang in about 24m, sand bottom. Small vessels with local knowledge can anchor farther in.

Teluk Tiru is a large bay, encumbered by reefs, that lies between Tanjung Linang and Pulau Dayong, an islet 35m high, is located 4 miles SW. Shoal patches of 3.6m lie 0.8 mile N and 1.3 miles S, respectively, of Pulau Dayong. Pulau Punisan, an island 122m high, is located in the N part of the bay, 1.8 miles SW of Tanjung Linang.

Anchorage is available in the entrance to Teluk Tiru, 1 mile NNE of Pulau Dayong, in depths of 25m, sand and mud

bottom. The bay should not be navigated because it has not been accurately surveyed. Westacott Bank, with a least depth of 12.8m, sand, lies about 4.3 miles SE of Tanjung Jebung.

1.26 Tanjung Lelan (2°49'N., 105°44'E.), 3 miles SW of Pulau Dayong, is the S extremity of the island; the hills slope gradually down to this point. A flat-topped rock, 6.1m high, lies close SE of the point and a 3.6m rock lies 2 miles NE. The point is marked by a light.

Tanjung Dayang, is located 3 miles NW of Tanjung Lelan. Gosong Margesson (Margesson Shoal), usually marked by tide-rips, lies 5 miles W of Tanjung Dayang. The shoal is composed of sand and coral; the N has a depth of 12.8m, and the S, a depth of 9.1m.

Pulau Daru, a wooded island 194m high, lies close offshore 3.5 miles N of Tanjung Dayang. Pulau Katukan, 33m high, lies close W of Pulau Daru.

Pulau Sibrong (2°58'N., 105°42'E.), 177m high, lies close offshore 2.5 miles N of Pulau Daru. Pulau Tulai, 81m high, lies about 0.5 mile off the NW end of Pulau Sibrong. Courier Patch, with a least depth of 11m, lies about 1.5 miles WNW of Pulau Tulai.

Tanjung Julian is a high point of land that projects from Pulau Jemaja in a WNW direction for about 1 mile. Its extremity is located about 1.3 miles NNW of Pulau Tulai. Pulau Ipan, an islet 24m high, lies about 1.3 mile WNW of Tanjung Julian. A smaller islet lies close S of Ipan.

There is a roadstead lying between Tanjung Julian on the N and Pulau Sibrong and Pulau Tulai on the S. This roadstead indents the W coast of the island for a distance of about 1 mile. A reef extends SE, from the N shore of the roadstead for a distance of about 0.8 mile and embraces the islet of Berala, which is located 0.5 mile E of Pulau Tulai.

1.27 Letong (2°59'N., 105°42'E.) ([World Port Index No. 51490](#)) is a village situated on the NE shore of the roadstead in a position about 0.5 mile E of Berala. A passage leads to the pier at Letong, which can accommodate boats even at low water.

Anchorage is available between Berala and Pulau Tulai, in depths of 16 to 20m. Care should be taken to avoid the detached reef, with a depth of 2.7m, which lies about 0.3 mile SE of Berala.

Kepulauan Badas

1.28 Kepulauan Badas are located between the parallels of 0°30'N and 0°39'N, and the meridians of 106°58'E and 107°12'E. The islands, which are outside the usual track of shipping, lie 35 miles SW of Kepulauan Tambelan.

Pulau Anakawur (0°33'N., 106°59'E.) the SW island of the group, is 94m high and rugged, except on its SW side which is sandy. It is fringed by a narrow reef on its E side.

Caution.—A dangerous rock is reported to lie about 52 miles ESE of Pulau Anakawur.

Pulau Pejamu, 42m high, is located 10.5 miles ESE of Pulau Anakawur. It is densely wooded and has a sandy beach on its E side. White Rock lies near the extremity of a reef extending 0.3

mile NNE of Pulau Pejamu. A detached bank, with a depth of 14m, lies 2 miles ESE of Pulau Pejamu.

Pinang Seribu, 122m high, lies 2.5 miles N of Pulau Anakawur. It appears as two islands when viewed from a distance SSE or NNW, due to the depression between the two hills standing on its E and W sides.

Tokong Kangen, 39m high, lies on a reef 0.5 mile N of Pinang Seribu and Pinang Seratus. A high rock lies 0.3 mile E of the same island. Pinang Seratus is located on a reef with depths of 0.3m, which extends 0.4 mile N. Tokon Buton, an islet 25m high, lies 0.3 mile S of Pinang Seribu, from which it is separated by a deep channel.

1.29 Pulau Kepahiang (0°38'N., 107°01'E.), 252m high, is the largest and N island of the group. The N and E sides of the island are fringed by a drying reef. There is a small bay on the NE side of the island where small craft with local knowledge can obtain sheltered anchorage off a settlement.

Pulau Segun, 44m high, is located about 0.5 mile SE of Pulau Kepahiang. There are several above-water rocks within 183m of Pulau Segun. A reef, with a depth of 1.8m, lies 1.3 miles ENE of Pulau Segun. Depths of less than 6.4m extend up to 0.3 mile N of the island. Pulau Penau, 3 miles ESE of Pulau Segun, has two hills joined by a narrow neck of low ground; the E hill is 189m high and the W is 101m high.

A reef with depths of less than 4m extends up to 0.3 mile off the N coast of the island. Pulau Batu, 96m high, a small islet, thickly covered with vegetation, stands 1.3 miles SE of Pulau Penau.

Pulau Tebon, 2 miles ESE of Pulau Penau, is the most important and most populated island of the group. It has two hills joined by low land. The E hill is 179m high.

A small bay fronted by a barrier reef is located on the N side of the island, but is accessible only to local craft. A detached 10m coral patch lies 0.4 mile NW of the N extremity of Pulau Tebon.

A prominent white rock, 21m high, lies 0.4 mile E of Pulau Tebon. A shoal patch of 11.8m extends 0.5 mile E of this rock. Pulau-pulau Brace consists of three islets.

Pinang Kuning (0°35'N. 107°10'E.), the NW islet, 118m high, lies 20 miles E of Pulau Tebon; Its S end terminates in a low sandy point with a conspicuous rock on its end. Rocks awash and below-water extend 0.2 mile N of Pinang Kuning. Pulau Tanjaru, an islet 114m high, is located about 0.8 miles SE of Pinang Kuning. A reef extends about 0.2 mile from its N side. An above water rock and a rock awash lie on the reef. Pulau Mengegah, 99m high, is a steep-to islet located about 0.2 mile E of Pulau Tanjura; a deep water channel separates the two.

Off-lying Islands and Dangers

1.30 Ebeling Shoal (0°28'N., 107°25'E.), an unmarked steep-to coral patch, with a least depth of 3m, about 183m in diameter, lies 17 miles ESE of Pulau Pejamu. Pulau Pejantan, 23 miles SSE of Pulau Pejamu, is a hilly island, mostly covered with jungle. The island reaches a height of 228m near its NE extremity. There are rocks and islets in the shoal water in the immediate vicinity of the island. A 14m spot, existence doubtful, lies 18 miles E of Pulau Pejantan.

Pulau Pengiki-besar (0°15'N., 108°03'E.) is the southeasternmost island of Kepulauan Tujah. It consists of a conical hill, 198m high, with a small hillock, 76m high, 0.2 mile W of it. A light is shown from the islet.

Pulau Pengiki-kecil, 75m high, is a rugged, precipitous islet lying 0.3 mile W of Pulau Pengiki-besar, from which it is separated by a deep channel.

A coral shoal, with a depth of 11m, lies in the N entrance of this channel. Both of these islands are covered by dense vegetation and are uninhabited.

Good anchorage for vessels with local knowledge, sheltered from the Northeast Monsoon, can be obtained in a depth of 27m on the SW side of Pulau Pengiki-besar.

Welstead Shoal (0°33'N., 107°53'E.), a group of pinnacles having a least depth of 4.9m is 183m wide and 0.3 mile long. A detached shoal, with a depth of 11m, lies 0.2 mile W of this shoal.

Rodger Rock (0°41'N., 107°32'E.) is a dangerous steep-to rock, which never breaks, has a depth of 0.9m.

Pulau Jangkulan (0°45'N., 107°19'E.) is a low, densely wooded islet. The coast consists of a white sandy beach, fringed by a reef extending 0.2 mile offshore.

Tokong Kemudi (0°56'N., 106°44'E.) is formed by two hills joined by a thickly wooded ridge. The N hill rises in a nearly vertical cliff from the sea to an elevation of 176m. A sugar-loaf shaped rock, 37m high, lies on the outer edge of a reef near the SE extremity of Tokong Kemudi.

Pulau Dumdum (1°12'N., 106°53'E.) is densely wooded and rises steeply from the sea in two peaks. The N and more pointed is 190m high. There is a sandy beach on its S side. The island is marked by a light.

Tokong Uwi consists of a group of two large and two small, bare, precipitous rocks. The rocks are lying on a steep-to reef, over which there is a depth of 4.9m. The N of the two larger rocks is 35m high.

Pulau Jemaja—Islands North and Northwest

1.31 Pulau Impul (3°05'N., 105°43'E.), 360m high, lies 1 mile N of Pulau Jemaja. A rock, with less than 1.8m, lies close off the S extremity of the island and a reef, barely awash at high water, lies off the SE extremity of the island.

Pulau Anak, 195m high, lies 0.3 mile NW of Pulau Impul. Several above-water rocks and two islets lie off the NW extremity of the island.

Pulau Mubur, about 0.5 mile W of Pulau Anak, has a ridge of round hills that rise to a height of 247m near the N end of the island. Pulau Datu is a small islet that lies 0.3 mile S of the SE extremity of Pulau Mubur.

Pulau Kramut, 113m high, lies close SW of Pulau Mubur and is joined to it by a mangrove swamp; there is a suitable channel for small boats through the swamp.

A bay, encumbered by foul ground, lies between the SE extremities of Pulau Kramut and Pulau Mubur. Vessels can anchor in the outer part of the bay, about 0.3 mile E of the SE extremity of Pulau Kramut, in depths of 37m, sand and rock.

A small village lies at the head of the bay, which is conspicuous from seaward because of the metal roofs on its buildings.

Pulau Mangkai (3°05'N., 105°36'E.) is the farthest NW of the SW group of Kepulauan Anambas. It is located about 2

miles WSW of Pulau Kramut. The channel between these two islands is deep and free of dangers.

Pulau Mangkai has an almost uniform height of 175m and is densely wooded. Pulau Mangkai-kecil, 61m high, lies close SE of Pulau Mangkai and is connected by a reef that uncovers at low water. The coasts of both islands are fairly steep-to. A light is shown from a white iron framework tower situated on a summit near the center of Pulau Mangkai.

Caution should be observed in the approach to Pulau Mungkai, as the light is frequently obscured by heavy rain squalls.

Impul Passage is the channel between Pulau Jemaja and the islands N and NW. It is about 1 mile wide and the only dangers are McCaulay Bank, with a least depth of 9m, lying about 1.8 miles WNW of Pulau Jemaja and Bunker Patch, with a least depth of 9m, lying 0.8 mile SE of the SE extremity of Pulau Impul.

A shoal, with a depth of 16.4m, lies in Impul Passage, 1.5 miles NW of Tanjung Mingga.

The tidal currents set E and W through Impul Passage, with a greatest velocity of about 1.5 knots at springs.

Pulau Jemaja—Islands Northeast and Southeast

1.32 Pulau Telaga (3°03'N., 105°59'E.), an island 4 miles long, is located 8 miles NE of the E extremity of Pulau Jemaja. The island consists of a ridge of densely wooded hills and has a height of 530m near its N end.

Foul ground extends 0.3 mile from its S extremity and a rocky islet is located near the S extremity of a reef 0.8 miles W of the foul ground. There are several villages on the island, most of them on its W side. Pulau Buton, a narrow islet, 110m high, is 0.5 mile W of the S part of Pulau Telaga.

A reef with several above-water rocks, extends 0.3 mile from the S end of the island and another reef extends 0.8 mile from the N end of the island. Pulau Dinkor, with white cliffs, stands near the N end of this reef.

A detached drying reef, about 0.65 mile in extent, lies 0.5 mile N from Pulau Dinkor. A group of four small islands lie close off the NW side of Pulau Telaga. Pulau Telaga-kecil, 178m high, is the largest of this group. The other islands of the group are Pulau Lima, Pulau Midai, and Pulau Pasu.

Tokong Blinau, a rock 1.9m high, lies 2.8 miles WSW of Telaga-kecil. Foul ground extends for a distance of 0.5 mile N, E, and S of the rock.

Pulau Durai (3°20'N., 106°03'E.), 15 miles NNE of Pulau Telaga, is 152m high. It is about 1 mile long and densely wooded. Several rocks, with less than 1.9m, lie close off the NW end, and a detached group of dangerous below-water rocks lie about 0.8 mile farther NW. Batu Mamong, 1m high, lies 0.5 mile SW of Pulau Durai.

Tokong Nanas, 21.3m high, is located on the E extremity of a reef, 1 mile extent, which lies 5.5 miles W of Pulau Durai.

Pulau Gendingunyut (3°08'N., 106°05'E.) is located 6.3 miles ENE of Pulau Telaga. A ridge of wooded hills, the highest of which is 290m, extends along the center of the island. A reef extends about 0.35 mile off the N end of the island and a rock, 1.5m high, is located on the reef.

Pulau Linggai, 290m high, lies 1 mile ESE of Pulau Gendingunyut. Pulau Semisak lies close off the N end of

Linggai and Pulau Musuh lies close off the S end. Both of these islets are connected to Pulau Linggai by reefs. Pulau Nawan, an islet 82m high, lies 1 mile E of Pulau Linggia.

Shoal water, with depths of less than 9.1m, extends 0.5 mile W from this island. Karang Singka, a rock awash, is located on a shoal 0.8 mile in length, about 1.3 miles NNE of Pulau Nawan.

Barnes Bank, with a least depth of 12m, sand and coral, lies 2 miles SSE of Pulau Nawan.

Pulau Telibang (3°00'N., 106°09'E.) is 17.5 miles E of Tanjung Pinang and 7 miles S of Pulau Nawan. The island, 186m high, is the farthest N of the Telibang Group.

Pulau Dikar lies 0.5 mile W of the island and stands on an irregular-shaped reef that extends from the islet 1 mile NNE. A reef extends 0.5 mile W. Several above-water rocks lie on the W reef. Detached reefs lie N of the islet.

A 5.4m patch and a 9.1m patch lie 1.3 miles NNE and 0.8 mile NW, respectively, from Pulau Dikar.

Pulau Lumbang Taban and Pulau Ujung are two islands lying 1.3 and 2.5 miles SE, respectively, of the S extremity of Pulau Telibang. Each island is surrounded by a coastal reef. Several detached reefs lie close off the W side of Lumbang Taban, and a rock stands on the reef 0.3 mile S of the SE extremity of Pulau Ujung.

Pulau Taloyan, an islet 87m high, lies 5 miles NE of Pulau Telibang and is the farthest island NE of the Telibang Group. Bennet Rock, with a depth of 3m, lies 1 mile E of the S extremity of Pulau Taloyan. A coral patch with a depth of less than 9.1m lies 0.5 mile NNE of Bennet Rock.

Pulau Buan, a wooded islet 76m high, lies 5.5 miles E of Pulau Telibang. A detached reef, parts of which are above water, lies close off its W side. Its SE side is fringed by a reef that extends as far as about 0.3 mile offshore. Two rocks, 0.4 mile off the island's S extremity, stand on this reef. The higher one is 4.2m. Pascu Rock, with a depth of 5m, lies 2 miles ENE of Pulau Buan.

1.33 Pulau Temiang (2°56'N., 106°08'E.) is 2.3 miles S of Pulau Telibang, and is the farthest N of the Temiang Group. The island, about 2.3 miles long, is rather low in the central part, but there are broad flat-topped hills near either end.

The hill near the W end has a height of 262m. A coastal reef surrounds the island and extends 0.3 mile off its SE extremity. The channel that lies between Pulau Temiang and the islands to the NE is clear and free of dangers.

Pulau Mangkudu, 30m high, and Pulau Telaga Cina, 40m, are islets lying 1 mile and 1.3 miles, respectively, off the SE extremity of Pulau Temiang.

The two islets are connected by a reef. A detached reef, with a head above water, lies in the channel midway between Pulau Temiang and Pulau Mangkudu. A small detached drying reef lies 0.7 mile S of Pulau Mangkudu.

Pulau Mangkait, 44m high, lies 1 mile S of Pulau Temiang. A narrow reef projects in a WNW direction from this islet for a distance of 0.3 mile.

Pulau Mentanyu, 99m high, and Pulau Genting, 96m high, are small islands that lie 3 and 4.5 miles, respectively, S of Pulau Temiang. Pulau Mentanyu has a reef 0.8 mile wide that extends in a NE direction, 0.7 mile. An islet stands near the N edge of this reef. A 10.9m patch lies close N of the reef that surrounds Pulau Genting.

A patch of coral and sand, with a depth of about 23m, lies 1.8 miles W of Pulau Genting. Pulau Serak, a small wooded island, 123m high and marked by a light, lies 7 miles SW of Pulau Genting. It is surrounded by a narrow reef, and is steep-to, except off its N and S sides where shoal water extends for a distance of 0.1 mile.

Pulau Airabu (Pulau Ayerabu) (2°46'N., 106°14'E.) is a large island about 7 miles SSE of Pulau Temiang. It is about 6.5 miles long and consists of a ridge of hills which attains an elevation of 486m near its NW extremity.

This peak is conspicuous from all directions. Another prominent peak, with a flat-topped summit 482m high, is located near the center of the island.

The N side of the island is fronted by a reef; its E side is indented by several small bays. A rock awash lies about 0.3 mile E of the central part of the island. A reef extends 0.5 mile E from the SE extremity of the island, and an isolated 5.4m patch lies 1 mile NE of this reef.

A bay indents the NW side of the island to a distance of 1.5 miles.

The S shore of the bay is encumbered by a reef, which extends 0.5 mile NW of the S entrance point. Vessels having local knowledge can anchor in the middle of the bay in depths of 22 to 27m, mud bottom. In foul weather a better anchorage can be found in the NE part of the bay in depths of 36m.

Pulau Lintang (2°43'N., 106°16'E.), an island 190m high, lies close SE of Pulau (Ayerabu) Airabu, from which it is separated by a narrow boat channel. An islet lies 0.3 mile off its W side. A group of six islets extends about 1.5 miles in an E and NE direction from the island. The passages between these islets should not be attempted.

1.34 Batuputih (2°42'N., 106°17'E.) consists of a group of rocks lying 0.8 mile SE of Pulau Lintang. The S rock of the group is flat-topped and 14m high. Pulau Gembili, an island 330m high and 2 miles long, lies about 1 mile off the W side of Pulau Airabu. Its summit, located near the center of the island, is sharp and prominent. A reef awash lies about 0.3 mile off its NE side.

Tokong Dahan (2°49'N., 106°10'E.), a dangerous rock with a least depth of 2m, lies 1.8 miles WNW of the N extremity of Pulau Airabu. The sea occasionally breaks over the rock. Tokong, an islet 30m high, lies 1.8 miles NNE of Tokong Dahan. This islet is steep-to and covered with trees.

Pulau Ritan, 137m high, is located 5.8 miles S of Pulau Lintang. It is surrounded by a reef that projects 0.5 mile E from its N part. An islet 85m high stands on the E edge of this reef. A conspicuous white rock 12.2m high lies on the reef off the W side of Pulau Ritan. A reef extends 0.5 mile S of the S extremity of the island.

An islet, 61m high, which has an extensive reef extending 0.5 mile from its W through N to NE sides, is located 1.3 miles NE of Pulau Ritan.

A flat rock, 9.1m high, marks the extremity of the reef extending from its W side. Brownrigg Rock, with a least depth of 3.6m, lies 2.5 miles NE of Pulau Ritan.

Tide rips have been frequently observed in the area S of Pulau Ritan, but a thorough survey of the area disclosed no dangers. It is believed that the irregular depths are responsible for such tide rips.

Off-lying Islands and Dangers

1.35 Damar (2°45'N., 105°23'E.) is a steep-to, almost barren rock, 82m high and marked by a light. It lies 20 miles WSW of Pulau Jemaja. A rock, with less than 1.8m, lies close S of Damar. Katoaka-besar, a coral reef with a least known depth of 8m, lies about 19 miles SSE of Damar. Less depths may exist on this shoal.

Tokong Malangbiru (2°18'N., 105°36'E.) lies 29 miles SSE of Damar. It is a white rock 34m high and almost barren. The rock, the farthest SW of this group, is steep-to all around except near its SW extremity, where shallow water extends for a short distance.

Pulau Repong, a small island, 212m high and marked by a light, is located 17 miles ENE of Tokong Malangbiru. The two peaks on the island form a saddle, the E peak being the higher. The S and E sides of the island are steep-to. The island is fringed by a narrow reef, the edge of which is steep.

Pulau Bawah is a group of two small islands and several rocks lying 13 miles NE of Pulau Repong. This group lies on an almost continuous reef about 2 miles long and is fairly steep-to. The N and larger island has a wooded summit, 134m high. A pyramidal-shaped rock, 67m high, lies close off the N end of this island. The S island is 125m high and is connected to the N island by a reef having several low bushy rocks on its edge.

Kepulauan Anambas—Northeast Group

1.36 Pulau Pahit (3°24'N., 106°09'E.), the NW islet of the NE group of Kepulauan Anambas, is an island nearly 1 mile long, lying 6.5 miles NE of Pulau Durai. This island can be recognized by its comparatively isolated position and its flat wooded summit, 213m high.

Tokong Belayar (Telok Belajar), the northernmost of Kepulauan Anambas, is a conspicuous pillar-shaped rock, 20.7m high, lying 7.5 miles ENE of Pulau Pahit. A steep-to reef extends NE from this rock for a distance of 0.5 mile and S from it for about 0.1 mile.

Pulau Mubur (3°20'N., 106°12'E.), 405m high and densely wooded, lies 3 miles SE of Pulau Pahit. It is one of the four large islands of the NE group; the NW coast of this island is foul. Teluk Ajer Bandung indents the S coast of Pulau Mubur to a distance of 1.8 miles.

Pulau Mantas, 158m high and 1 mile long, lies close E of the SW extremity of Pulau Mubur, and forms the W entrance point of Teluk Ajer Bandung. Good anchorage is available 1.3 miles within the bay in depths of 31m, mud bottom.

Pulau Rinyi, an islet 50m high, lies 0.3 mile off the coast of Pulau Mubur, about 1 mile NW of Mantas. This islet has black cliffs, about 15m high, on its S end. Pulau Pejantai, a flat-topped islet 66m high, lies about 1 mile N of the W extremity of Pulau Mubur. Pulau Noran, an islet 49m high, lies on the reef close N of Pulau Mubur.

Pulau Matak (3°18'N., 106°16'E.) lies close E of Pulau Mubur. The island is about 9.5 miles long and 3.5 miles wide. Its conspicuous summit, 416m high, is near the S extremity of the island. The entire coastline of the island is mountainous, but its interior is low and flat.

Selat Matak separates Pulau Matak and Pulau Mubur. Its S end is about 2.3 miles wide and narrows to 0.3 mile at its N end where it opens into Teluk Matak. The channel is deep and free

of dangers. The tidal current sets N and S and obtains a velocity of 1 to 2 knots in its narrowest part.

Teluk Matak is a large bay located between the N parts of Pulau Matak and Pulau Mubur; its greatest width is 2.5 miles. Pulau Ucing, 73m high, is the farthest E of several rocks and islets that lie in the NW corner of the bay. Vessels entering Teluk Matak should pass E of Pulau Ucing. A small islet and a reef are located close offshore in the E part of the bay.

Pulau Semut (3°24'N., 106°17'E.) is separated from Pulau Matak to the S by a fouled channel less than 183m wide at its narrowest point. The wooded island is 216m high. Tanjung Pandan, the N extremity of Pulau Semut, forms the N entrance point of Teluk Matak. A 5.5m patch lies 1.3 mile SE of Tanjung Pandan. Teluk Niulwan is a narrow, shallow inlet of little navigational importance that divides the SE part of Pulau Matak into two peninsulas.

1.37 Pulau Siantan (3°10'N., 106°15'E.), the largest and most important island of the NE group, is about 10.5 miles long and 5.5 miles wide. It lies S of Pulau Matak, from which it is separated by a channel 0.3 to 2.5 miles wide.

The island is mountainous throughout and densely wooded. It attains an elevation of 365m near the middle of the W side of the island. This peak is conspicuous but the general outline of the mountain ridges in the wider parts of the island is smooth and rounded.

The coastline is irregular and is indented by several bays, some of which afford good anchorage.

From Tanjung Pedas, the NW extremity of Pulau Siantan, the coast trends in a general S direction for a distance of about 7 miles to Tanjung Mandi Angin. Between these points the W coast is fairly steep-to and is free of reefs. Several sunken rocks lie off this section of the coast within the 11m line.

Teluk Rambutam is a narrow bay that lies E of Tanjung Mandi Angin; it is too narrow to afford a secure anchorage.

Teluk Ayer Bini (3°06'N., 106°15'E.) lies 3 miles SE of Tanjung Mandi Angin and is entered between Tanjung Baik and Tanjung Maluat, 1.8 miles ESE. Pulau Sui, 91m high, is located in the SE entrance of the bay.

Several white rocks lie about 0.8 mile WNW of Pulau Sui. A 3m patch, marked by discoloration, lies in the bay 0.8 mile N of Sui.

Good anchorage is available in Teluk Ayer Bini, in a position 0.5 mile N of Pulau Sui, in 29m, mud bottom.

Between Tanjung Maluat and Tanjung Kretang, the SE extremity of Pulau Siantan, the coast recedes 1.3 miles forming an inlet whose shores are fronted by a reef.

The SE part of Pulau Siantan consists of an irregularly shaped peninsula that terminates at Tanjung Kretang. A sharp, conspicuous peak, 235m high, is the summit of this peninsula and is located about 0.8 mile N of Tanjung Kretang.

Pulau Berhala, an islet 43m high, with a reef projecting 0.3 mile from its W side, lies 0.5 mile ESE of Tanjung Kretang.

From Tanjung Kretang, the coast trends in a N direction for about 2.5 miles to the N end of the peninsula, which forms the SE part of Pulau Siantan; there are two small inlets W of the peninsula. From this point the coast continues in a generally N direction for about 3.5 miles to the entrance of a narrow reef-strewn inlet, which has two waterfalls close together on its W side.

From the N entrance point of this inlet, the coast trends in a NW direction for about 4.5 miles to Tanjung Momang, which is the N extremity of Pulau Siantan.

Most of the E and N coast of Siantan is fronted by a reef that extends up to 0.5 mile offshore; there are islets located on these reefs. Tanjung Angkak is located about 0.5 mile SW of Tanjung Momang. It is the E entrance point of Teluk Terampa, whose W entrance, Tanjung Baruk, is located 0.8 miles farther W.

Teluk Terampa, about 0.8 mile long, lies 1.3 miles SE of Tanjung Pedas, the NW extremity of Pulau Siantan.

The bay has a sandy beach at its head; however, both sides are fringed by reefs that extend as far as 0.15 mile offshore. A light is shown from Tanjung Pedas and another light is shown 1.5 miles SE of Pedas Light.

1.38 Tarempah (Terampa) (3°13'N., 106°13'E.) ([World Port Index No. 51500](#)), the principal village in Kepulauan Anambas, is situated on the sandy beach at the head of Teluk Terampa. A government official resides at Tarempah and the government offices are situated near the E side of the village.

A pier, with a depth of 1.2m, is situated near the government offices and a pier, 95m in length, that will accommodate vessels drawing up to 3.9m, is situated 91m farther W.

Anchorage can be taken near the head of the bay in depths of 17m, sand and mud.

Selat Peninting separates Pulau Siantan from Pulau Matak. Its W entrance lies between Tanjung Pedas and Tanjung Yang, the W extremity of Pulau Matak. At this point the channel is about 2.5 miles wide, but narrows to 0.35 mile, about 3.3 miles within its entrance.

The W entrance is deep and free of dangers but at its narrow point it is encumbered by reefs and sunken rocks. There is a narrow passage between the reefs that front the N and S shores.

Thetis Channel

1.39 The NE group of Kepulauan Anambas is divided into two smaller groups by Thetis Channel. The three large islands of the NE group, previously described beginning in [paragraph 1.36](#), lie on the W side of Thetis Channel. The other islands and dangers that lie on the W side of the channel and those islands and dangers that are adjacent to it are described below, beginning in [paragraph 1.40](#).

Thetis Channel—West Side

1.40 Pulau Batu Garam (3°22'N., 106°20'E.), 235m high, lies on the W side of Thetis Channel and is located 1 mile E of the NE extremity of Pulau Matak. From Tanjung Kepinis, the N extremity of Batu Garam, a ridge of densely wooded hills extends nearly the entire 6 miles of its length to its S termination at Tanjung Muning. Snul, an islet 91m high, lies 0.3 mile off the central part of its E coast.

There are a number of small islands in the shallow, reef-strewn passage that lies between Pulau Matak and Pulau Batu Garam. This area cannot be navigated. Pigus, 53m high, Pulau Pidi, 70m high, Pulau Mantang-besar, 72m high, and Pulau Mantang-kecil, 61m high, extend 2 miles SSE of Tanjung Muning. Reefs extend W from these islets 0.3 mile.

Foul ground extends E from Mantang-besar and SSW from Mantang-kecil for about 0.3 mile. Pulau Beliba, an island 93m high and surrounded by reefs, lies about 0.8 mile SW of Tanjung Muning.

Pulau Lidi, a narrow, wooded island 67m high and about 1 mile long, is located 1 mile S of Pulau Beliba.

The reef that surrounds the island extends 0.6 mile from its NE extremity. Selat Tebang lies between Pulau Beliba and Pulau Lidi on the W and the chain of four islets extending S from Pulau Batu Garam on the E.

A coral patch, with a least depth of 10.9m, is located in the channel entrance, 0.5 mile S of Pulau Mantang-kecil.

Vessels can anchor near the middle of Selat Tebang in a position about 0.8 mile W of Pulau Mantang-besar in 23m, mud.

Pulau Air Asuk (3°15'N., 106°18'E.), a narrow wooded islet 2.5 miles long, is located 0.3 mile W of Pulau Lidi and is separated from Pulau Matak on the W by the N continuation of Selat Peninting, which has been previously described in [paragraph 1.38](#).

A reef, about 2.5 miles in length, extends S from Pulau Lidi and along the E coast of Pulau Air Asuk. Several islets lie on this reef. Pulau Tobing, 44m high, is located at the SE extremity of the reef.

A 3.6m patch lies 0.5 mile SE of Tobing. Pulau Teluk Pau, an island 168m high and 1.3 miles long, lies close S of Pulau Air Asuk. Several detached patches of reef lie near the middle of Selat Peninting between Teluk Pau and Pulau Matok.

Numerous reefs lie within a radius of 2 miles from NE through SE of the S extremity of Pulau Teluk Pau; a number of islets lie on these reefs. Passage between these reefs is possible for small craft with local knowledge.

1.41 Pulau Massabang (3°10'N., 106°18'E.), 133m high and Batu Belah, 117m high, are small islands located, about 0.5 and 0.65 mile off the middle part of the E coast of Pulau Siantan. Both are surrounded by reefs that extend as much as 0.8 mile N and E from Batu Belah and 0.5 mile NE from Pulau Masabang. Two detached reefs lie 1.8 miles NNE and 1.3 miles NE, respectively, of Pulau Masabang.

Selat Batu Belah is the channel between Pulau Siantan and its off-lying reefs on the W, and Batu Belah and Pulau Masabang on the E. Its N entrance is at its junction with the E part of Selat Peninting. The channel, about 0.2 mile wide, has small detached reefs in the fairway and should only be used by vessels with local knowledge.

Pulau Bajau (3°08'N., 106°19'E.), a large irregular-shaped island about 5 miles long, lies close off the SE coast of Pulau Siantan from which it is separated by a narrow channel. There are two conspicuous peaks on the W side of the island about 1 mile apart; the SW peak is 239m high, the other is 238m high.

The E and W sides of the island are fairly steep-to but its N and S sides are fringed by reefs and are indented by several bays and inlets.

These bays and inlets are fringed by reefs; there are several detached reefs in the vicinity of the island, which may best be seen on the chart. Tanjung Suka, the S point of the island, has several rocks, the highest being 21m high, lying close S.

Between Tanjung Suka and Tanjung Dumang, a point about 1.3 miles to the NW, there is a bay fringed by reefs; several detached

reefs and sunken rocks lie near the center of the bay. The one farthest S is located about 0.3 mile NE of Tanjung Dumang.

Anchorage can be obtained near the entrance to this bay in a position about 0.3 mile SSE of Tanjung Dumang in depths of 27m, sand bottom.

Pulau Bajau is separated from Pulau Siantan by three channels that range from 0.1 to 0.6 mile in width. From N to S they are Selat Taburik, Selat Semanggi, and Selat Berawa. Tidal currents up to 1 knot may be encountered in the channels.

Pemutus Group

1.42 Pemutus (3°05'N., 106°20'E.), 79m high and about 1.5 miles long, is situated 1.3 miles E of the S extremity of Pulau Bajau; it is surrounded by a narrow reef. Two small islets lie 0.3 mile WSW and 0.5 mile SW of the S extremity of Pemutus.

Two small islands, joined by a reef, lie 0.5 mile E of the N extremity of Pemutus. Pengelat, an island 76m high, lies 1.3 miles farther NE. Two small islets lie, respectively, 0.3 mile WSW and 0.8 mile SW of the S extremity of Pemutus.

Selat Tanjung Suka is the name of the channel between the islands just described and the SE coast of Pulau Bajau. The fairway has an average width of 0.5 mile and is free of dangers except for the detached reef which dries 0.9m, lying 0.8 mile NNW of the N extremity of Pemutus.

The tidal currents, which are diurnal, set through the channel with a velocity of 1.5 to 2 knots; the flood sets SW and the ebb NE. A S wind and current often produce tide rips and overfalls in the S part of the channel.

Walsh Bank (3°02'N., 106°18'E.), with a least depth of 11m, coral bottom, lies in the fairway between the SW and NE groups of Kepulauan Anambas, about 2.5 miles SSE of the S extremity of Pulau Siantan. The 40m line is not more than 0.5 mile from this patch.

Pulau Memperuk Group

1.43 Pulau Memperuk (3°04'N., 106°21'E.), an island, 232m high and about 2.8 miles long, lies 0.5 mile E of Pemutus. Its N and S extremities are fairly steep-to but the remainder of the island is fringed by a narrow reef. Rocks, the highest of which is 2m, extend 0.3 mile E from the middle of Memperuk.

Pulau Abang, an islet 105m high, lies close W of the S part of Memperuk. A rock, 4.5m high, stands on the reef that projects from the W side of the islet. The channel between Memperuk and the islands that lie to the W and NW is narrow and not recommended.

Pulau Akar Group

1.44 Pulau Akar (3°02'N., 106°24'E.) is the largest and farthest E of the Pulau Akar group. It is 160m high and 1.5 miles in length. Pulau Semut, an island 73m high and about 0.5 mile long, is the W extremity of the Pulau Akar group. It lies 1.3 miles SE of the S extremity of Memperuk.

Other islands of the group are located between Pulau Semut and Pulau Akar, 1.3 miles SE. They are: Pulau Teluk Bakau,

69m high; Baba, 41m high, and Bate 82m, high. Tjatu, an islet 58m high, lies about 0.1 mile SW of Pulau Akar.

An isolated 10m patch lies 0.8 mile NNW of Pulau Semut. A rock, 0.9m high, is on the S extremity of the patch, and a rock, which dries 0.9m, is on the N extremity.

Pulau Nunsa (2°59'N., 106°25'E.), the S island of the NE group of Kepulauan Anambas, is located 1.3 miles SSE of Pulau Akar across a deep channel which frequently develops tide rips. This narrow island is 0.8 mile long and attains an elevation of 60m near its N end. Pulau Nunsa is marked by a light.

A small bank, with a least depth of 24m, lies 1.5 miles S of Nunsa. The tidal currents in this vicinity, which are diurnal, attain a velocity of 1 knot; the flood sets SW and the ebb sets NE.

Thetis Channel—East Side (Pulau Penjalin-Besar Group)

1.45 Pulau Penjalin-besar (3°23'N., 106°26'E.) is 5 miles E of Pulau Batu Garam and marks the NE entrance of Thetis Channel; its rounded summit is 131m high.

Pulau Setuju, 66m high, lies at the extremity of a reef 0.5 mile NE of Pulau Penjalin-besar; an islet 38m high is located on the same reef 0.3 mile S of Pulau Setuju.

Pulau Penjalin-kecil, an island 98m high, is separated from the SE extremity of Pulau Penjalin-besar by a narrow channel. The island is fringed by a reef, and two rocks, one of which is 0.6m high and is on the S edge of the reef 0.5 mile S of its S extremity.

Pulau Pasu, an islet 61m high, lies about 0.2 mile E of Pulau Penjalin-kecil; it is joined by a reef. Two smaller islets lie on this reef.

Vessels can anchor N of Pulau Penjalin-kecil with the E extremity of Pulau Penjalin-besar bearing 220°, distance 0.5 mile, in depths of 27m, coral bottom.

Alarm Bank (3°23'N., 106°29'E.), a sand and coral shoal having a least known depth of 8.5m, lies about 0.8 mile ENE of Pulau Pasu. An 11m patch is located 0.5 mile NE of this shoal and a 28m patch lies 0.5 mile farther E.

Alarm Bank and the two patches just described are marked by heavy tide rips, and navigation in this vicinity should be avoided.

Manda Riau Group

1.46 Pulau Manda Riau Darat (3°18'N., 106°24'E.), an irregular-shaped island, 142m high, is located 3.8 miles SSW of Pulau Penjalin-besar.

Pulau Nyamuk, 55m high, and 0.5 mile long, is located 1.8 miles NNW of Manda Riau Darat and is the N island of the Manda Riau group. It is free of reefs, but there are depths of less than 11m around the island that extend as far as 0.5 mile SSW of it.

A small islet, 9.1m high, is located 0.8 mile SSW of Pulau Nyamuk and an island 61m high is located 0.8 mile farther SSE.

Pulau Manda Riau Laut is 102m high and 2 miles long. Its N extremity is located 0.1 mile E of the SE extremity of Pulau Manda Riau Darat and the SW side of the island is connected

to the S extremity of Manda Riau Darat by a shallow reef. An islet lies on the edge of a reef that extends 0.2 mile S from the S extremity of Pulau Manda Riau Laut.

Pulau Mangkian, 43m high and cultivated with coconut trees, lies 1.3 miles SW of Pulau Manda Riau Laut. The entire island is surrounded by a reef, which extends as much as 0.2 mile offshore on its W and SE sides.

A shoal with a depth of 4.5m lies 0.6 mile S of Pulau Mangkian. Two patches with depths of 9.4m and 7.6m lie, respectively, 1 mile SSE and 1.5 miles S of the 4.5m shoal.

Pulau Sagu Dampar Group

1.47 Pulau Sagu Dampar (3°15'N., 106°27'E.), 152m high and 1.5 miles long, is located 2 miles SE of Pulau Manda Riau Laut.

A reef extends 1 mile N from the island and Sama, an islet 69m high, and a smaller islet 12.2m high are located on this reef; a small islet lies on the reef close S of Sama. Three detached reefs, the center one drying 1.2m, lie 0.3 mile off the SW side of the island.

Pulau Selai Group

1.48 Pulau Busung (3°14'N., 106°28'E.), a wooded island 102m high and 0.5 mile long, is located 0.8 mile E of the S extremity of Pulau Sagu Dampar. A conspicuous boulder 15.2m high lies in the shallow water that extends 0.3 mile from the E side of the island. Several above-water boulders lie close S of this boulder. A detached patch, awash, lies 0.3 mile S of the island. A rock, with a depth of less than 1.8m, lies in mid-channel between the S extremities of Pulau Sagu Dampar and Pulau Busung. Penilan, a narrow island 93m high and 1 mile long, is located 0.65 mile SE of Pulau Busung.

Kudok, a 26m high islet, lies 1.3 miles W of the S extremity of Penilan. A detached reef, about 0.3 mile in diameter, which dries 1.5m, lies 0.8 mile W of Kudok.

A smaller reef lies close NW, and two patches, with least depths of 6.7m and 9.1m, lie, respectively, 0.5 mile NW and 0.3 mile N of this drying reef. Four small reefs, two of which uncover, lie within 1.3 miles SW of the large reef.

Pulau Selai (3°12'N., 106°29'E.), the farthest E of Kepulauan Anambas, is located close SE of Penilan from which it is separated by a narrow boat channel. Its summit, which is 162m high, appears as a sharp peak when viewed from N or S but from other directions it has the appearance of a wide ridge.

The coasts of the island are indented by several bays; those on the S and E side are encumbered by reefs and sunken rocks. Anchorage, which is sheltered from S winds, can be taken near the center of the bay on the N side of the island, in a depth of 23m.

Teluk Risan Group

1.49 Pulau Teluk Risan (3°11'N., 106°27'E.), an irregular-shaped island 174m high, is located 1.8 miles SW of Pulau Selai. Except for a portion of its E side, the island is surrounded by a reef that extends as far as 0.35 mile from its S

side. A rock stands on the reef close E of its N extremity, and another rock stands on a detached reef 0.1 mile E of its S extremity. An islet, 46m high, lies near the edge of the reef, S of the island's S extremity. An area of foul ground 0.5 mile long, lies 0.5 mile off the W side of Pulau Teluk Risan.

A patch, with a least depth of 4.5m, lies about 0.5 mile W of the foul ground, and a detached drying reef lies 1.3 miles WNW of the foul ground. Temuruk, an island 85m high, lies 0.1 mile S of Teluk Risan. A reef extends N along the W side of Temuruk to the S extremity of Teluk Risan. Nibung, an islet 41m high, lies 0.15 mile SE of Temuruk.

Pulau Punjung Group

1.50 Pulau Punjung (3°09'N., 106°25'E.), the largest island of the group, is located 0.5 mile S of Temuruk. This island is about 2 miles long and has two prominent peaks near its center; one of them rises to 348m high.

The E side of the island is steep-to but the remainder of it is fringed by a narrow reef.

An islet, 58m high, lies 0.3 mile S of the SE extremity of the island and another islet, 29m high, lies close off the SW side.

Pempang, a narrow island 140m high and about 1 mile long, is located 0.5 mile SE of Pulau Punjung. This inhabited island is fairly steep-to and densely wooded. Pulau Mentalak, an island, 91m high and 1.3 miles long, is located 0.65 mile S of the SW extremity of Pulau Punjung; it is partially cultivated with coconut trees.

Pejaul Group

1.51 Pulau Pejaul (3°09'N., 106°23'E.), 231m high, is about 1.3 miles long and lies 0.3 mile W of Pulau Punjung.

Two islets, 46m and 55m high respectively, are located close off the NW side of the island. A rock, 0.9m high, lies 0.2 mile SW of the 46m islet. Two 11m patches, 0.5 mile apart, lie 0.3 mile off the S side of Pejaul.

Pengending, an island 248m high, lies 0.3 mile NE of Pulau Pejaul to which it is connected by a reef. An islet, 49m high, lies on the edge of a reef close N of the island.

A rock, awash, lies 0.15 mile N of the island and another rock 1.2m high lies between them. An islet, 35m high, lies 0.5 mile NW of the 49m islet. There is an anchorage, sheltered from S winds, with the 49m islet bearing 095° and the 35m islet bearing 034°, in 24m, sand and coral.

Selat Teluk Dalam is the channel between the Pulau Punjung group on the E and the Pulau Pejaul group on the W. The channel, which has a least width of 0.1 mile, is deep and free of detached dangers although its N end is somewhat encumbered by the reef that extends NE from Pengending.

The channel between the Pejaul group and the Pulau Punjung group, on the S and Temuruk on the N, is about 0.4 mile wide and is deep and clear.

Pulau Luyung Group

1.52 Pulau Luyung (3°11'N., 106°22'E.), a narrow, wooded island about 1.8 miles long, is located 1.8 miles NW of Pulau Pejaul. It consists of two well-defined peaks separated by a narrow strip of low land. The N peak, which is higher, is

114m high. A shoal with a least depth of 5m lies 1.3 miles NNW of the island.

A patch, with a least depth of 3.6m, lies 0.5 mile W of the island. Pulau Getah, 88m high, lies SE of Pulau Luyung and is connected to that island by a reef 0.1 mile in extent.

Esperance Reef, an isolated reef having a sand-bank that dries 1.8m on its S end, lies 1 mile NE of Pulau Luyung. Shallow coral patches, with depths of less than 10m, lie within 2 miles NE from the reef. Depths less than charted may exist over these shoals.

Thetis Channel—Islands and Dangers

1.53 Hooper Bank (3°20'N., 106°21'E.) is two detached shoals which lie E and SE of the S extremity of Pulau Batu Garam. The N patch, with a sand and coral bottom, has a least depth of 9.1m and lies 1.3 miles E of Batu Garam. The S patch, with a depth of 11m, lies 0.8 mile S of the N patch.

Hale Bank (3°17'N., 106°22'E.), a coral shoal having a least depth of 6m, lies nearly in the middle of Thetis Channel in a position 1.5 miles SW of Pulau Manda Riau Darat.

Thetis Reef (3°15'N., 106°21'E.), lying near the middle of Thetis Channel, is a coral reef about 0.5 mile long. It is located 2 miles WSW of Pulau Mangkian. A 7m patch lie about 0.8 mile WNW of the reef. Patches with depths of 5 to 9m lie within 1 mile N of Thetis Reef. A narrow reef, about 1 mile long, is located about 1 mile SW of Thetis Reef. There is a sand cay on the middle of the W side of this reef which dries 1.5m.

Pulau Mangkian Pandak (3°12'N., 106°21'E.), an island 49m high, is located 1.3 miles NW of Pulau Luyung. Two wooded islets 24m and 49m high lie, respectively, 0.3 mile ESE and 0.5 mile SSE of the island.

A coral head, with a depth of 6.4m, lies 1 mile NNE of Pulau Mangkian Padak and a coral shoal, with a least depth of 5m lies 0.6 mile NE of it.

Chabrol Bank (3°08'N., 106°22'E.), two in number, lies 1 mile W of Pulau Pejaul. The E patch has a least depth of 6m and the W has a least depth of 8m.

Howard Rock (3°05'N., 106°22'E.), with a depth of 3.6m, lies 0.8 mile ESE of the N extremity of Pulau Memperuk.

Egeria Rock (3°02'N., 106°27'E.), a coral head with depths of about 4m, lies in the S approach to Thetis Channel in a position about 2 miles E of Pulau Akar. A 6m coral patch lies 0.5 mile W of the rock.

1.54 Udang Marine Terminal (4°02'N., 106°30'E.) lies 40 miles NNE of Kepulauan Anambas and 20 miles SE of the main route between Singapore and Hong Kong. The oilfield consists of Udang A and B production platforms and a storage tanker moored 1 mile ESE of Udang A.

A pipeline connects the platforms to the storage tanker. Areas within 1.8 miles of the storage tanker and 1 mile of each platform are restricted and anchoring is prohibited.

Depths—Limitations.—Tankers up to 93,000 dwt with a maximum length of 260m and a draft of 15m can use the terminal. Vessels berth at the storage tanker portside-to.

Tankers must arrive with clean ballast. There are no port facilities available at Udang Terminal.

Vessels berth port side to alongside the storage tanker. The draft alongside the berthing is reported to be 19m. Vessels up to 93,000 dwt can use the terminal.

Anchorage.—The recommended anchorage is 3.5 miles WNW of Udang A.

Pilotage.—Pilotage is compulsory when mooring and unmooring, the mooring master acts as pilot. Vessels will normally moor during daylight hours, but may unmoor at any time, weather permitting.

Restricted area.—A rectangular shape restricted area of 3 miles by 2 miles has been established surrounding the terminal. Vessels are not allowed to enter a prohibited area, within the restricted area around the terminal, without the berthing master onboard. Anchoring within the restricted area is prohibited. There are no facilities for bunkers, fresh water, provisions, or reception of dirty ballast.

Kakap Natuna Oilfield is about 63 miles ESE of Tapis A platform, and about 68 miles NNW of Udang Marine Terminal. It also lies 30 miles NW of the main shipping lane between Singapore and Hong Kong.

1.55 Kakap Marine Terminal (5°01.7'N., 105°55.9'E.) is a floating production, storage, and off-loading vessel (FPSO). Kalap Natuna is a converted tanker permanently moored to a single point mooring (SPM) buoy. A vessel up to 100,000 dwt and 300m long can be brought alongside to the FPSO in a depth of about 29m.

A production platform, about 1 mile WNW, is connected by a pipeline to the SPM. The SPM displays a yellow Morse (U) light, the bow of the FPSO displays a white Morse (U) light, and the bridge displays a red Morse (U) light. A flare on wellhead platform is visible at considerable distances.

Pilotage is compulsory and berthing is restricted to daylight hours only. The berthing master boards vessels in the anchorage area. Night berthing may be allowed under special circumstances at the discretion of the Operations Superintendent. Vessels should send their ETA on departure from the last port-of-call and thereafter 72 hours, 48 hours, and 24 hours in advance to Kakap Natuna Marine Terminal. Tankers must arrive with clean ballast. There are no facilities for bunkers, fresh water, provisions, or reception of dirty ballast. Several oil platforms stand 9 miles SSE of the terminal and they are connected to it by a submarine pipeline. Anchoring is prohibited within 500m of the pipeline.

Vessels loading at Kakap Terminal must comply with the latest Safety of Life at Sea (SOLAS) conventions and Maritime Pollutions (MARPOL) Protocols. Any vessel found deficient to comply with these regulations will be refused mooring and loading.

Anchorage is designated for vessels awaiting to load, within a radius of 1 mile centered at position 5°02.9'N, 105°58.5'E.

Restricted and Prohibited Areas.—The platforms and wellheads in Kakap Oil Field are contained within the restricted area, best seen on the chart; unauthorized vessels should not enter this area. Vessels are not allowed to enter a prohibited area within a radius of 1 mile from the SPM buoy and 500m from the wellhead platform without the berthing master onboard.

Borneo—Northwest Coast—General Remarks

1.56 The NW coast of Borneo extends from Tanjong Datu, a salient headland, to Tanjung Padangtikar, about 166 miles SSE. Except for a few bold headlands and a short stretch at the extreme N end, this coast is low and densely wooded. The S part is occupied by the swampy delta of the Sungai Kapuas, and detached hills some distance inland; the delta mouths form the only landmarks along this part of the coast.

The mountains backing the N portion of the W coast of Borneo are more rugged and rise closer to the shore.

The entire coast is fronted by the shoal waters of the South China Sea, the 20m line lying as much as 10 miles offshore and the 40m line lying about 75 miles off the S part of this coast.

Tanjong Datu to Sungai Sambas-Besar

1.57 Tanjong Datu (2°05'N., 109°39'E.) is the termination of a mountainous peninsula projecting about 6.8 miles in a NNE direction from the coast. Tanjong Datu Lighthouse, a metal tower, stands on the point at an elevation of 171m. Close SE and N are, respectively, a wind generator (metal tower) 6m, and the old light now reserved for emergency use.

The peninsula is distinguished by two peaks. Gunung Datu, 550m high, stands 2 miles S of Tanjong Datu. Gunung Malaka, 540m high, stands 1 mile farther S. Gunung Pangi, 240m high, is an isolated peak rising from the low ground 2.5 miles S of Gunung Malaka.

The entire coastline of the peninsula terminating at Tanjong Datu is steep-to and is fronted by a reef and by many above-water rocks. There are strong eddies off the point. Anchorage can be obtained in depths of 11 to 14m about 1 mile off the W side of the peninsula.

From Tanjong Datu to Tanjung Api, about 20 miles WSW, the coast is low and sandy. A few rocks lie close offshore along this section of the coast.

A shoal with a least depth of 8.2m lies close within the 18.3m line, 9.3 miles NE of Tanjung Api.

Niger Bank (2°09'N., 109°39'E.), with a least depth of 7.9m, lies 4.8 miles N of Tanjong Datu. Three 11m patches lie 3.3, 3.8, and 4.5 miles NW of Tanjong Datu.

With N winds and a N current there are tide-rips on this bank which from a distance resemble breakers. Shoal patches with depths of 12.8 to 18.2m extend 16 miles W of Niger Bank. They may best be seen on the chart. A shoal with a least depth of 9.1m lies close within the 18.3m line, 9.5 miles NE of Tanjung Api.

Api Passage (2°02'N., 109°12'E.), the channel separating the S group of Kepulauan Natuna from the NW coast of Borneo, is relatively deep and clear of dangers.

Two shoals, each with a depth of 8.8m, sand, lie 7.8 and 9.5 miles NE of Tanjung Api. A shoal, with a depth of 14m lies 10.5 miles NNE of Tanjung Api with a 15.8m patch lying 2 miles W.

A 14.6m patch has been reported approximately 10.3 miles NNW of Tanjung Api. A bank, with depths of 12.8 to 18m, lies with its shallowest part 17.5 miles NE of Tanjung Api. It extends 4 miles SW and 1.5 miles NE from this position.

Two shoals lie 1.5 miles WSW and 2.5 miles NE of this bank with depths of 16.7m and 17.3m, respectively.

1.58 Tanjung Api (1°57'N., 109°20'E.) is a low, sandy point covered with virgin forest. From this point the land trends 1.8 miles SW to Tanjung Mungguesak, a low, sandy point, then SSW 8.5 miles to Tanjung Blimbing. A bight lies between Tanjung Mungguesak and Tanjung Blimbing; the shore of the bight is low and sandy.

A shoal ridge begins 1.3 miles N of Tanjung Api with depth of 4.8m. The shoal continues SW for 2.5 miles where it terminates at a depth of 0.9m. The outer side of the shoal is steep-to.

Bukit Mungguesak, 70m high, and Bukit Tjermai, 75m high, are located, respectively, 0.8 mile and 3.8 miles SE of Tanjung Api. Another prominent landmark on this coast is Gunung Asu Ansang, 600m high, located 11 miles SE of Tanjung Api.

From Tanjung Mungguesak to Tanjung Blimbing, the 5.4m line extends from 0.5 mile offshore at the N end to 2 miles offshore at Tanjung Blimbing. A spit, with 1.8m depth, extends 2.8 miles N from Tanjung Blimbing. A bank, with depths from 1.2 to 5.5m, lies close inside the edge of the coastal bank, 5 miles W of Tanjung Blimbing.

Sungai Paloh is of little importance to shipping. Its normal entrance is between Tanjung Blimbing and the islet 0.2 mile S, with some high casuarina trees, and then W of Pulau Tua.

Pulau Tua (1°45'N., 109°16'E.) lies 0.5 mile offshore, S of the entrance to Sungai Paloh. It is low with very tall trees on it. The N part of the island at one time had been washed away and in the same period the sea breached Tanjung Blimbing in two places leaving openings about 0.3 mile wide. Vessels should not attempt to enter Sungai Paloh without local knowledge.

From Pulau Tua, the coast trends SW 20 miles to Tanjung Bayung, then SSW 19 miles to Tanjung Kalang Bau, the N entrance point of Sungai Sambas-besar.

With the exception of Gunung Raya located 14 miles SSW of Tanjung Bayung, this entire portion of the coast is low and flat.

The most prominent of the landmarks on this coast is Gunung Melintang, 345m high, 8 miles ESE of Tanjung Blimbing. Other peaks stand in the following positions relative to Gunung Melintang: Gunung Belau Tunggal, 500m high, 4 miles E; Bukit Sagu, 245m high, 1.5 miles W; and Bukit Se Tengah, 245m high, 2.5 miles WNW.

Bukit Ambawang, 160m high, is located 4 miles SE of Tanjung Blimbing. Gunung Raya, 124m high, is located close inshore, 14 miles SSW of Tanjung Bayung.

From Pulau Tua to Tanjung Bayung, the 5.4m line lies up to 5 miles offshore and close off the point. West of Gunung Raya, the 20m line is only about 0.5 mile outside the 5.4m line; vessels should not approach within the 20m line.

Pulau Pontianak, 55m high, a conspicuous islet, lie about 0.5 mile SW of Gunung Raya. Anchorage may be had in the bight formed between Gunung Raya and Tanjung Bayung, mud bottom.

1.59 Sungai Sambas-besar (1°11'N., 108°57'E.) is entered between Tanjung Kalang Bau, 83m high, and Tanjung Bila, a low flat point, 3.3 miles SW. There are numerous villages and settlements on both banks of the river as far as Kartijasa, about 25 miles inland.

The mouth of the river is easily identified by Bukit Penibunga, 78m high, which is a spur extending N from

Gunung Pemangkat, 395m high. Tanjung Kalang Bau is prominent, as is Gunung Raya, 5 miles NNE.

Pulau Pekak, 32m high, lying 0.5 mile NNW of Tanjung Kalang Bau is also prominent.

The entrance of the river is fronted by a bar, which is steep-to on its seaward side. The least depth on the bar was reported to be 2.1m. The depths in the river from inside the bar to its confluence with Sungai Sambas-kecil, 15 miles upstream, were not less than 2m. The least depth in the fairway to Kartijasa, 10 miles farther upstream, is 5.9m. Range lights lead across the bar to the entrance to the river.

The river entrance is generally obstructed by fishing stakes and net floats. Two obstructions lie in the entrance, one on each side of the channel. The W obstruction lies 1.5 miles WSW of Tanjung Kalang Bau. Within the N entrance point, an islet, 15m high, with a rock close S which dries 0.9m, is located close SE of Tanjung Kalang Bau. Only those vessels with local knowledge should transit Sungai Sambas-besar.

In Sungai Sambas-besar, the tidal currents are semi-diurnal and attain a rate of about 2 knots in the entrance at springs. Off the entrance, tidal currents are N and S and attain a rate of 1.5 knots.

Kampung Pemangkat is on the S side of the river, close to Gunung Penibungan, where there is a wharf 44m long with depths alongside of 0.8m. The harbor and customs offices are situated here.

Anchorage is available abreast the village. The anchorage limits are defined on the W by a line joining Tanjung Bila and Tanjung Kalang Bau and on the E by a line drawn 146° from Gunung Raya.

Vessels are cautioned that the mudbank fringing the S bank of the river between Tanjung Penibungan and Tanjung Parakan, about 1.5 miles NE, is very steep-to and caution must be exercised by vessels anchoring in this area.

1.60 Tanjung Parakan (1°12'N., 108°59'E.) is a point on the S side of the river, 1.3 miles E of Tanjung Kalang Bau. Tanjung Semperiuk and Tanjung Rambajan are on the N side of the river, 5.5 and 11.3 miles, respectively, above Tanjung Kalang Bau.

The mouth of the Sungai Sambas-kecil is on the SE side of Sungai Sambas-besar, about 3.5 miles NE of Tanjung Rambajan. The Sungai Bantan flows into the Sungai Sambas-besar about 8 miles farther upstream, then 2 miles further to Kartijasa. A canal connects Kartijasa to Sambas which is navigable by local craft.

Sungai Sambas-kecil (1°18'N., 109°10'E.) leads to the town of Sambas 11 miles above its confluence with Sungai Sambas-besar. The river is narrow and winding, with depths in the fairway of not less than 6.1m, except on the inner bar.

The inner bar, about 6 miles within the mouth of the river, has a least depth of 2.7m, and a channel width across the bar of 25m. A wreck which dries 0.9m and is marked by a beacon which also covers, lies on the rocks on the W side of the channel that crosses the bar.

It is not advisable to pass the wreck at highest high water due to it and the beacon being covered at such time.

Strong tidal currents exist near the wreck during times of low water.

1.61 Sambas (1°22'N., 109°18'E.) ([World Port Index No. 51960](#)) is a town about 13 miles upstream from the mouth of the Sungai Sambas-kecil and about 26 miles from the mouth of the Sungai Sambas-besar. A Government Administrative Officer resides at Sambas. There is a quay, 38m long, which can accommodate vessels up to 600 dwt drawing 4m at all stages of the tide.

Pilotage is not available. Only those vessels with local knowledge should transit Sungai Sambas-kecil. The coast should be approached outside the 10m line to avoid the numerous fish traps which exist in this vicinity.

Sungai Sambas-besar to Sungai Kapuas-kecil

1.62 From **Tanjung Bila** (1°10'N., 108°55'E.) to Tanjung Batubelat, about 22 miles SSW, the shoreline is, low and flat. Tanjung Gunung, 156m high, is 4.3 miles SSE of Tanjung Bila and Tanjung Bajau, a high, precipitous point, which is located 13.8 miles farther SSW. From Tanjung Bajau the coast trends SW 4.5 miles to Tanjung Batubelat, the W extremity of Borneo, which is a prominent point.

The N coast of the area described above is backed by Gunung Serindung, 261m high, and Gunung Simpadang, 276m high, located, respectively, 7.3 and 14 miles SE of Tanjung Bila, with neither one being particularly valuable as a landmark.

Gunung Sekunang, 99m high, is a conspicuous hill 0.8 miles inland, 8.5 miles SSE of Tanjung Bila. Gunung Sjakok, 303m high, also conspicuous, is 1.5 miles inland, 9.3 miles S of Gunung Sekunang.

Between Tanjung Bila and Tanjung Bajau the coast recedes about 4 miles forming Teluk Singkawang. Sungai Sebangkau and Sungai Selakau flow into Teluk Singkawang about 3 and 6.5 miles, respectively, SSE of Tanjung Bila. Sungai Singkawang flows into Teluk Singkawang, 5 miles NE of Tanjung Bajau.

The Sungai Singkawang entrance is encumbered by a bar that almost dries; passage over the bar is difficult, even for small vessels.

The village of Singkawang is 2 miles upstream from the mouth of the river and is the residence of a government official. A group of above-water rocks lies off Tanjung Merah, 2.5 miles SE of Tanjung Bajau.

Tanjung Batubelat (0°49'N., 108°51'E.) is the W extremity of Borneo and it rises to Gunung Batubelat, 210m high, which lies 1 mile E. Tanjung Bajau rises to Gunung Besar, 306m, about 1.5 miles inland, 4.5 miles NE of Tanjung Batubelat.

The coast from Tanjung Batubelat trends S for a distance of about 29 miles to Tanjung Bangkai. It is low and wooded and has trees extending down to the water's edge. A coastal bank, with depths of less than 5.3m, extends as far as 2.5 miles from this part of the coast.

1.63 Tanjung Teranjun (0°43'N., 108°52'E.), located 6.8 miles S of Tanjung Batubelat, is high and cliffy. Gunung Bunga, 0.5 mile inland, is 195m high. Gunung Haur, 140m high, stands 4 miles ESE of Tanjung Teranjun. Gunung Batubaya, 350m high, standing 9 miles SE of Tanjung Teranjun, is prominent, as is Gunung Raya, 921m high, located 13.5 miles NE of the same point.

Tanjung Sanggau, 12.5 miles S of Tanjung Teranjung, has a hillock near its extremity which terminates in a low cliff. Gunung Kebangsi, 150m high, and Gunung Bangkam, 155m high, lie, respectively, 2.5 miles E and 3.5 miles ENE of this point.

Penibungan (0°24'N., 108°56'E.), 54m high and formerly an island, now forms a projection and is situated 6.3 miles S of Tanjung Sanggau. Tanjung Bangkai, a low flat point, lies 4 miles SSW of Penibungan. A radio transmits from a position 2 miles NE of Tanjung Bangkai.

Pulau Semesa (0°43'N., 108°52'E.), 110m high, is on the coastal bank 0.8 mile W of Tanjung Teranjung. Pulau Tempurung is close N of Pulau Semesa and Pulau Keran, a high rock, lies close S of Tanjung Teranjung.

From Tanjung Bangkai, the coast curves SE for a distance of about 24 miles to the mouth of the Sungai Kapuas-kecil. There are three prominent landmarks on this sector of the coast. Lontjit, 470m high, and Gunung Raya, 615m high, are located, respectively, 16.5 and 19 miles E of Tanjung Bangkai and Gunung Peniraman, 231m high, is located 0.5 mile inland, 15 miles SE of the same point. The Sungai Mempawah, a small river, discharges 3.5 miles SE of Tanjung Bangkai. Vessels drawing 1.5m can reach the village of Mendialin, 20 miles upstream, at high water.

Anchorage can be obtained, in depths of 9 to 14m, anywhere between the mouths of Sungai Mempawah and Sungai Kapuas-kecil.

Pulau Datu (Pulau Datuk) (0°08'N., 108°36'E.), 306m high, steep-to and marked by a light, lies about 22 miles SW of Tanjung Bangkai.

Kepulauan Burung (Pulau-pulau Burang) are a group of steep-to, densely wooded islands, lying within 10 miles of the coast, between Tanjung Batubelat and Tanjung Bangkai. Tidal currents around Kepulauan Burung set NE and SW at a maximum rate of 2 knots, and are always noticeable in spite of the monsoon current.

Pulau Kabung (0°50'N., 108°47'E.), 297m high, the N island of the group, lies 3 miles WNW of Tanjung Batubelat. A wreck lies 0.6 mile N of the island. There are two shoals with depths of 3.9 and 8m in the fairway between Pulau Kabung and Tanjung Batubelat.

Pulau Penata-kecil, 105m high, lies on a ridge of the coastal bank, 4 miles S of Pulau Kabung. Pulau (Seluwas) Seluas lies on the same ridge about 0.4 mile NE of Pulau Penata-kecil. Detached shoals, with depths from 4.5 to 8.2m, lie within 1.8 miles N of these islands.

Pulau Penata-besar, 102m high near its N end, lies 1 mile E of Pulau Penata-kecil; a clear channel separates these islands. Some above-water rocks lie 0.2 mile N of Pulau Penata-besar.

1.64 Pulau Lemukutan (0°46'N., 108°43'E.), the largest and W island of Kepulauan Burung is 2 miles W of Pulau Penata-besar. The channel between these two islands is deep and clear of dangers. Pulau Lemukutan consists of a ridge of hills. The highest, near the S end is 366m high. The coast in the middle of the E side is cliffy.

A light stands 1.3 miles S of the N end of the island.

Pulau Randayan, 22m high, lies on a bank with depths of 11 to 15m, 0.8 mile S of Pulau Lemukutan. A 6.8m shoal, not marked by discoloration, lies 4.8 miles ESE of Pulau Randayan.

Pulau Baru, 69m high, lies 6.5 miles SSE of Pulau Randayan. A reef fringes the islet and extends 0.3 mile S and NW from it. A small steep-to shoal, with a depth of 7.3m, extends about 0.5 mile NW of the island.

Pulau Temaju, 240m high, is located 3 miles W of the mainland from which it is separated by a channel 1 mile wide, with a depth of 11m in the fairway. The island is steep-to except on the N part of the E side, where a reef extends 0.2 mile offshore. There is good anchorage for small vessels with local knowledge during the Southwest Monsoon, May to September, in a depth of 9m, in the W of two bays which form the N coast of the island. There is anchorage anywhere off this island, in depths of 11 to 13m.

Pulau Damar lies 9 miles offshore, 6.5 miles SSW of Pulau Temaju. The islet, 24m high is steep-to, with few trees.

Pulau Sitanjan (0°22'N., 108°45'E.), 48m high, the S island of the group, lies 10.5 miles W of Tanjung Bangkai and 3 miles SW of Pulau Damar. Anchorage may be obtained in depths of 13 to 16m on the bank extending S from the island during N winds or at the change of the monsoon.

Directions.—When proceeding N from the vicinity of Tanjung Bangkai steer to pass 0.5 mile W of Pulau Temaju. Then pass E of Pulau Baru and proceed through one of the channels separating the islands or between these islands and the mainland, keeping in depths of not less than 13m, and guarding against the shoal patches W of Tanjung Batubelat.

1.65 Sungai Kapuas-kecil (0°03'N., 109°11'E.), one of the branches of the delta of Sungai Kapuas leading to Pontianak, is entered between Tanjung Intan, upon which stands the prominent house of the **Sultan** (0°02'N., 109°11'E.), and a point 2 miles N. The entrance is fronted by a bar of soft mud which extends 5 miles offshore through which a channel 137m wide has been dredged. In prior years, it was reported that a vessel with a draft of 5.3m and length 115m could enter over the bar.

There are alternative inner routes to Pontianak that are entered well S of the entrance to Sungai Kapuas-kecil.

These alternative routes enter Sungai Kapuas-kecil above Pontianak.

Pontianak Road, off the entrance of Sungai Kapuas-kecil, is open to the prevailing winds. Due to the outflow of the river, vessels always lie with the wind and sea on the beam.

Pilotage is compulsory and is available by day only. A 24 hour advance notice is required. Vessels awaiting a pilot may anchor SW of the outer buoy, clear of the prohibited anchorage. Anchorage may be obtained in Pontianak Road, about 6 miles W of the river's mouth, in depths of 20m, mud. In this depth the ground swell is less than closer in. In gale winds, vessels should anchor farther out to avoid the heavy seas that break in the shallow water. There is a prohibited anchorage area charted in the N part of Pontianak Road.

The entrance to the river is marked by buoys, beacons, and lighted beacons. The dredged channel to Pontianak, in which there was a least depth of 3.9m reported, is marked by range lights in line bearing 103°30'.

A danger, marked by a buoy, lies 17 miles W of the front leading light, and an unmarked dangerous wreck lies on the N side of the entrance channel, 8 miles WNW of the same leading light. There is a Customs Station at Kampung Jungkat on the N side of the river entrance.

Pulau Panjang (0°02'N., 109°13'E.) lies on the S side of the river entrance. Selat Bantan runs S of it.

Pulau Duwit lies close N of Pulau Panjang. Close off the E end of Pulau Panjang are Pulau Babi, Pulau Bumin, Pulau Baharu, and another small islet W of these.

Batu Layang (Batu Lajang) is an islet off the N side of the river 3.8 miles ESE of the E end of Pulau Panjang. A stony spit, with depths from 0.8 to 0.5m, extends from the N bank to about mid-channel, 0.15 mile SW of the W end of Batu Layang. The banks of the river from its mouth nearly to Pontianak are overgrown, but there are few high trees. Some small settlements are situated on the N bank, but the S bank is almost uninhabited.

Directions.—Vessels should steer to a position about 2.5 miles W of the outer beacons, then steer for the outer beacons and enter on the range lights. Before entering the river, vessels should make certain that passage over the bar is all clear as there is insufficient room for passing in the dredged channel. Outbound vessels take precedence.

Proceed through the dredged channel on the range line. When the leading range light is 1 mile away, change course and steer for the customhouse at Kampung Jungkat.

After passing the rear range lighted beacon, keep to the N side of the channel until a beacon on the N side of the river, 1.3 miles WNW of Batu Layang, is reached. This beacon has a notice board painted "menjeberang" (cross-over).

Steer across the river to a position 0.4 mile SW of Batu Layang and keep 183m offshore until clear of the spit, about 1 mile ESE of Batu Layang. Finally, steer mid-channel to the anchorage off Pontianak.

Dredges operate on the bar of Sungai Kapuas-kecil. Vessels should always pass S of the dredges. This may entail keeping S of the range line. In these circumstances, a vessel should sound two long blasts, suggesting the dredge will then move to the N side of the channel. The vessel should regain proper alignment as soon as possible after passing the dredge.

1.66 Pontianak (0°01'S., 109°20'E.) ([World Port Index No. 51941](#)), the principal town on the W coast of Borneo, is situated about 10 miles from the entrance of Sungai Kapuas-kecil and is near the confluence of this river with Sungai Landak. The town stands on low and marshy ground which is partially inundated at high water.

Tides—Currents.—The tide is usually diurnal. The average range of the tide at full moon is 1.28m and at a new moon is 2.4m.

Off the mouth of the river, the ebb current sets 285° with a maximum general velocity of 2.5 knots. The flood current sets 110° with a maximum general velocity of 0.6 knots. These figures may differ because the current is greatly influenced by the wind. The ebb current at Pontianak is stronger and of longer duration than the flood, especially at night, due to the land breezes.

A tide gauge, with a flagstaff above it, is situated on Government Wharf. The following tidal signals are displayed:

1. Flood current—Red flag.
2. Ebb current—Blue flag.
3. Slack water—White flag.

Depths—Limitations.—The depths alongside the wharves range from 1.4m alongside the Government Wharf to 4.3m alongside the wharf on the N side of the river. The largest

vessel entering the harbor was 5,750 dwt, with a length of 109m and 5m draft.

Pilotage.—Pilotage is compulsory, should be ordered 24 hours in advance and is available 24 hours a day. Pilot boards at the river entrance.

Anchorage.—Anchorage at Pontianak is abreast the town in depths of 16 to 18m. There is room for vessels to swing in the anchorage; however, they should keep well clear of the government pier.

Caution.—Due to submarine cables, vessels are cautioned against anchoring in two areas situated, respectively, close NW and SE of the entrance to Sungai Landak, nearly opposite Pontianak. The limits of each area are marked by a red triangular board from which a light is shown.

1.67 Sungai Kapuas-kecil trends 28 miles SE of Pontianak to **Suka Lating** (0°19'S., 109°35'E.) where it joins Sungai Kapuas and Sungai Pungar-besar. This portion of the river is navigable by vessels drawing not over 3m and there are no dangers. However, the sharp turns at Telukkumpai and Tanjung Selebes, 10 and 27 miles respectively, above Pontianak, should be approached with caution.

Sungai Kapuas (0°19'S., 109°35'E.), the principal river on the W coast of Borneo, trends generally E from its junction with Sungai Kapuas-kecil for a distance of about 620 miles.

From Sungai Kapuas-kecil the coast trends S about 45 miles to Tanjung Padangtikar. This low marshy coast forms the N part of the delta of Sungai Kapuas. It is broken into several islands by the various streams discharging through it.

Tanjung Putus (0°17'S., 109°05'E.) is located 20 miles SSW of Tanjung Intan, the site of the Sultan's house. Other points along this sector of the delta are Tanjung Bunga, Tanjung Burung, and Tanjung Padangtikar, located respectively, 4.5, 18, and 24.5 miles SSE of Tanjung Putus. There are a few detached hills which, together with the mouths of the rivers, form the only landmarks along this coast.

Gunung Batuwangkan (0°23'S., 109°19'E.), 450m high, is the highest of the three peaks of Gunung Ambawang, located about 15 miles SE of Tanjung Putus. The other two peaks, Gunung Resam, 360m high and Gunung Laut, 315m high, stand 2.3 and 3.5 miles WNW of Gunung Batawangkan.

Gunung Radak (0°33'S., 109°26'E.), an isolated table-shaped hill, 204m high, is located 15.8 miles E of Tanjung Burung, and Gunung Turjun, 75m high, is located 2.5 miles SW of Gunung Radak.

From Tanjung Saleh, about 6 miles S of Tanjung Intan, to Tanjung Putus, 14 miles SSW, the coast consists of several islands which form the delta of the Sungai Pungur-besar, a continuation of Sungai Kapuas. Because of the bar that encumbers its mouth and the shoal depths in the lower reaches.

Sungai Ambawang, one of the mouths of the Sungai Kupuas, flows into the sea close N of Tanjung Bunga; its mouth is encumbered by a bar.

Sungai Padangtikar is entered between Tanjung Burung and Tanjung Padangtikar, 6.5 miles SE, and has the deepest entrance of any river on the W coast of Borneo.

The least depth in the channel over the bar off the river mouth is 5.8m.

The 5.5m line varies from 5 miles off the entrance to Sungai Kapuas-kecil to 9 miles W of Tanjung Padangtikar. Vessels

approaching Sungai Padangtikar should make for the lighted buoy (safe water) which is moored 10 miles W of Tanjung Padangtikar.

A stranded wreck is situated 4.5 miles SW of Tanjung Burung. There are no other charted dangers along this section of the coast.

1.68 Sungai Padangtikar (0°37'S., 109°12'E.), whose head lies in an ESE direction, connects with Selat Lida by means of Selat Paduampat. The mouth of Sungai Padangtikar is also the starting point of Inner Route 3 and Inner Route 4 to Pontianak.

Pulau Telukayer (0°43'S., 109°33'E.), a loading place for timber, lies up river 19 miles ESE of Tanjung Padangtikar and can be reached by vessels drawing 7.3m.

Selat Panjang joins Sungai Padangtikar 2.5 miles ENE of Tanjung Padangtikar. Sungai Kubu joins the N side of Selat Panjang, 4 miles farther NE.

Directions.—When approaching Sungai Padangtikar, vessels should stay close to the lighted buoy, moored 10 miles W of Tanjung Padangtikar, and cross the bar on an E course, and then pass about 0.8 mile N of Tanjung Padangtikar. Care should be taken to clear the 4.9m patch, located about 1.5 miles ESE of the lighted buoy. After passing Tanjung Padangtikar, vessels bound for Selat Panjang or Selat Kubu should steer in the buoyed channel. Fishing stakes are found on the bar and in the river on both sides of the fairway.

Anchorage may be obtained in the W entrance to Selat Panjang about 2.5 miles ENE of Tanjung Padangtikar. Pilotage is compulsory for vessels of more than 200 dwt.

Local pilots are available daily up to 1900 local time. They embark in a position 1 mile W of the fairway lighted buoy, 10 miles W of Tanjung Padangtikar.

For vessels with local knowledge, there are four inland water routes through the delta of Sungai Kapuas, which lead to Pontianak.